

TA-F333ESL/F770ES/F870ES

SERVICE MANUAL

AEP Model
UK Model
TA-F770ES

E Model
TA-F333ESL

Germany Model
TA-F770ES/F870ES



Photo: TA-F333ESL

SPECIFICATIONS

Amplifier Section

Items	Condition		Data	
			TA-F870ES	TA-F333ESL/TA-F770ES
Continuous RMS power output (both channels driven simultaneously)	4 ohms, 20 Hz – 20 kHz	Countries other than North European Countries	170 W + 170 W (THD 0.02%) (DIN: 200 W + 200 W)	140 W + 140 W (THD 0.02%) (DIN: 180 W + 180 W)
	6 ohms, 20 Hz – 20 kHz	North European countries	—	110 W + 110 W (THD 0.018%) (DIN: 130 W + 130 W)
	8 ohms, 20 Hz – 20 kHz	Countries other than North European countries	120 W + 120 W (THD 0.004%) (DIN: 135 W + 135 W)	100 W + 100 W (THD 0.015%) (DIN: 120 W + 120 W)
		North European countries	—	90 W + 90 W (THD 0.015%) (DIN: 105 W + 105 W)
Power band width (IHF)	8 ohms, THD 0.02%		10 Hz – 100 kHz at 45 W	10 Hz – 100 kHz at 45 W
Dynamic headroom ('78 IHF)	4 ohms		2 dB	2 dB
	8 ohms		1.2 dB	1.2 dB
Total harmonic distortion	8 ohms, at 10 watt output		0.003%	0.003%
Intermodulation (IM) distortion 60 Hz: 7 kHz = 4 : 1	4 ohms, at rated output		0.008%	0.008%
	6 ohms, at rated output		0.006%	0.006%
	8 ohms, at rated output		0.004%	0.004%
Damping factor	8 ohms, at 1 kHz		100	100
Residual noise	network A, 8 ohms		less than 110 μ V	less than 110 μ V

— Continued on next page —

INTEGRATED STEREO AMPLIFIER
SONY[®]

Items	Condition	Data	
		TA-F870ES	TA-F333ESL/TA-F770ES
Frequency response	PHONO MM	RIAA equalization curve ± 0.2 dB	RIAA equalization curve ± 0.2 dB
	TUNER, CD, TAPE 1, 2, 3, DIRECT IN	2 Hz – 200 kHz ± ^{0.3} dB	2 Hz – 200 kHz ± ^{0.3} dB
Input sensitivity	PHONO	0.17 mV (1 kohm) 0.17 mV (100 ohms)	0.17 mV (1 kohm) 0.17 mV (100 ohms)
		2.5 mV, 50 kohms	2.5 mV, 50 kohms
	TUNER, CD, DIRECT IN, TAPE 1, 2, 3, ADAPTOR, AUX	150 mV, 20 kohms	150 mV, 20 kohms
S/N (network) ('78 IHF)	PHONO	79 (0.5 mV)	77 (0.17 mV)
		93 (5 mV)	93 (2.5 mV)
	TUNER, CD, DIRECT IN, TAPE 1, 2, 3, ADAPTOR, AUX	105 (150 mV)	105 (150 mV)
Output voltage impedance	REC OUT 1, 2, 3 ADAPTOR	150mV, 1kohm	150mV, 1kohm
	HEADPHONES	25 miliwatts (at 8 ohms) Accepts low and high impedance headphones.	25 miliwatts (at 8 ohms) Accepts low impedance headphones.
Tone controls	BASS, at 100 Hz	± 7 dB	± 7 dB
	TREBLE, at 10 kHz	± 6 dB	± 6 dB
Subsonic filter	–	6 dB/octave attenuation below 15 Hz	6 dB/octave attenuation below 15 Hz
Muting	–	– 20 dB	– 20 dB

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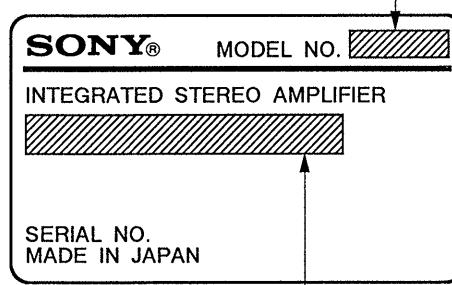
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MODEL IDENTIFICATION

– Specification Labels –

TA-F333ESL
TA-F770ES
TA-F870ES

AEP, Germany model: AC: 220 V ~50/60 Hz
 UK model: AC: 240 V ~50/60 Hz
 E model: AC: 120/220/240 V ~50/60 Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

General

System Preamplifier section: Low-noise high gain NFB type equalizer amplifier, passive type direct tone control
Power amplifier section: Pure-complementary SEPP power amplifier, MOS FET power transistor for final stage.

Power requirements
UK model: 240 v AC, 50 Hz
AEP, Germany model: 220 – 230 V AC, 50/60 Hz
E model: 120 V, 220 V, or 240 V AC, adjustable, 50/60 Hz

Power consumption

	TA-F870ES	TA-F333ESL TA-F770ES
UK model	–	760 W
Germany model	390 W	330W
North European model	–	260 W
European model	–	330 W
E model	–	330 W

AC outlet

	TA-F870ES	TA-F770ES
UK model	–	1 switched, 100 W max.
Germany model	1 switched 100 W max.	1 switched 100 W max.
AEP model	–	1 switched 100 W max.

Dimensions

TA-F333ESL/TA-F770ES (AEP, E, Germany model):

Approx. 470 × 165 × 435 mm (w/h/d)
(18½ × 6½ × 17⅛ inches)

TA-F770ES (UK model):

Approx. 430 × 165 × 435 mm (w/h/d)
(17 × 6½ × 17⅛ inches)

TA-F870ES (Germany model):

Approx. 470 × 165 × 435 mm (w/h/d)
(18½ × 6½ × 17⅛ inches)

Weight

TA-F333ESL/TA-F770ES (AEP, E, Germany model):

Approx. 21.3 kg (47 lbs) net

TA-F870ES (U. K. model):

Approx. 20 kg (44 lbs 2oz) net

TA-F870ES (Germany model)

Approx. 24 kg (53 lbs) net

Accessories supplied

Remote commander RM-S703 (1)

Sony batteries SUM-3 (NS)

Screws (8) (except for U. K. model)

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.

Operating Voltage

Before connecting the unit to an AC outlet, be sure that the operating voltage of your unit is identical with that of your local power supply.

UK model	Operates on 240 V AC, 50 Hz.
AEP, Germany model	Operates on 220 – 230 V AC, 50/60 Hz.
E model	Operates on either 120 V, 220 V, 240 V AC, adjustable, 50/60 Hz. The voltage selector is located on the rear panel. If you need to change the selector, disconnect the AC power cord and set the selector to the proper voltage of your local power supply.

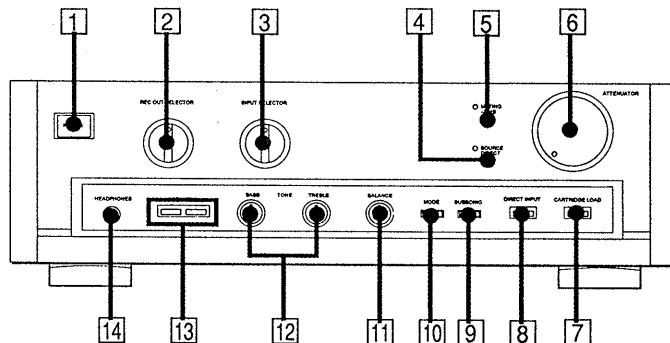
SECTION 1

GENERAL

This section is extracted from instruction manual.

Function of Controls

Front panel

**[1] POWER switch and indicator**

After the power is turned on, the standby indicator lights in red as the built-in muting circuit activates. When the amplifier stays in a stable operating condition, the indicator lights in green.

The indicator lights in red if the unit detects shorting of circuit of the speaker outputs or in case of short-circuit of the inputs of DC components. In such a case, disconnect the power source and check the connected components and speaker systems.

[2] REC OUT SELECTOR

Selects the program source sent to the REC OUT jacks for recording.

[3] INPUT SELECTOR

Selects the desired program source for listening.

[4] SOURCE DIRECT button and indicator

Depress the button. The red indicator lights and the circuits of the TONE control, SUBSONIC filter button, BALANCE control and MODE selector are disengaged without regard to the setting of the switches.

[5] MUTING button and indicator

Depress the button to reduce the sound level by 20 dB. (Output voltage becomes 1/10) Generally, keep the button released (OFF).

[6] ATTENUATOR

Adjusts the sound level. To increase the sound level, turn the control clockwise. To decrease the level, turn the control counterclockwise.

Note

Turn down the sound level before switching on the unit. This prevents damage to speakers.

[7] CARTRIDGE LOAD selector

Set the selector according to your cartridge.

MM: For moving-magnet type cartridge

MC: For moving-coil type cartridge

40 Ω: For a cartridge with an impedance of 40 ohms or more.

3 Ω: For a cartridge with an impedance of 3 ohms to 40 ohms.

[8] DIRECT INPUT selector

Set to SOURCE to select program source with the INPUT SELECTOR.

To listen to a program source processed through the equipment, such as graphic equalizer, connected to the ADAPTOR jacks, set it to ADAPTOR

To listen to a program source connected to DIRECT IN jacks, set it to DIRECT.

[9] SUBSONIC filter button

Depress the button to reduce noise components of less than 15 Hz, which cause modulation noise.

[10] MODE selector

STEREO: For listening to a stereo program.
MONO: For listening to a monaural program.

[11] BALANCE control

Adjusts the sound level of left and right speakers.

[12] BASS and TREBLE TONE controls

Adjust the tone quality.
To increase bass or treble sound, turn the control clockwise. To decrease them, turn the control counterclockwise.

[13] SPEAKERS buttons (TA-F222ESA/TA-F570ES/**TA-F670ES)**

Select speaker system A or B, or both.

To drive speaker system A: Depress A button.

To drive speaker system B: Depress B button.

To drive speaker system A and B: Depress A and B.

For headphones listening only: Set both to OFF (□).

TA-F670ES only

To use power amplifier or active speaker system connected to the PRE OUT jacks, depress B/PRE OUT.

SPEAKERS selector

Select speaker system A or B, or both.

To drive speaker system A: Set the selector to A.

To drive speaker system B: Set the selector to B.

To drive speaker system A and B: Set the selector A+B.

For headphones listening only: Set the selector to OFF.

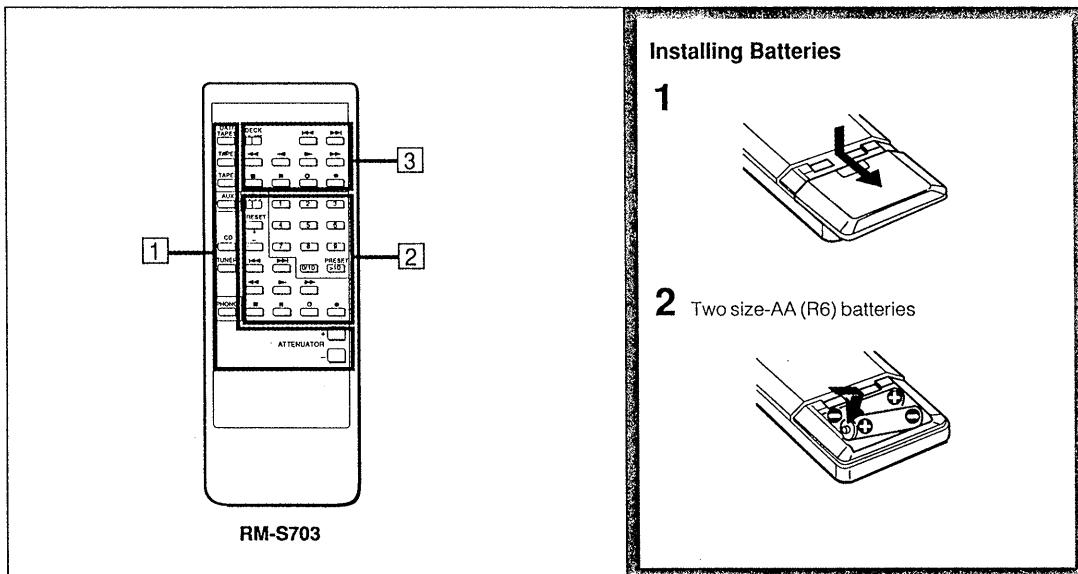
To use power amplifier or active speaker system connected to the PRE OUT jacks, set the selector to B/PRE OUT.

[14] HEADPHONES jack

Accepts the stereo phone plug of headphones.

[15] Remote control sensor

Remote Commander RM-S703



Function of Controls

1 Amplifier control section

Input selectors: Select an input source of the amplifier.
ATTENUATOR +/- buttons: Control the volume of amplifier.

2 Tuner/DAT deck/CD player control section

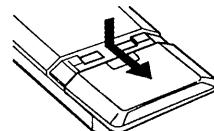
DAT/CD selector: Selects DAT deck or CD player.
◀◀/▶▶: Locates a desired selection.
◀◀/▶▶: Manual search
▶: Play
■: Stop
■: Pause
○: Record muting
●: Recording
PRESET +/- buttons: Selects a preset channel of the tuner. (only for the tuner)
Program number (1 to 0/10, and >10) and ENTER buttons: Select a preset station or track.

3 Tape deck control section

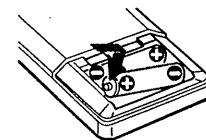
DECK A/B selector: Selects deck A or B .
◀◀/▶▶: Locates a desired selection.
◀/▶: Play
◀◀/▶▶: Fast winding
■: Stop
■: Pause
○: Record muting
●: Recording

Installing Batteries

1



2 Two size-AA (R6) batteries



Notes on Batteries

Battery life

About half a year of normal operation can be expected when using the Sony SUM-3 (NS) batteries. When the batteries are exhausted, the remote commander can no longer operate the unit. If this happens, replace both batteries with new ones.

To avoid battery leakage

When the commander is not used for a long time, remove the batteries to avoid damage caused by battery leakage and corrosion.

To avoid malfunction of the remote commander

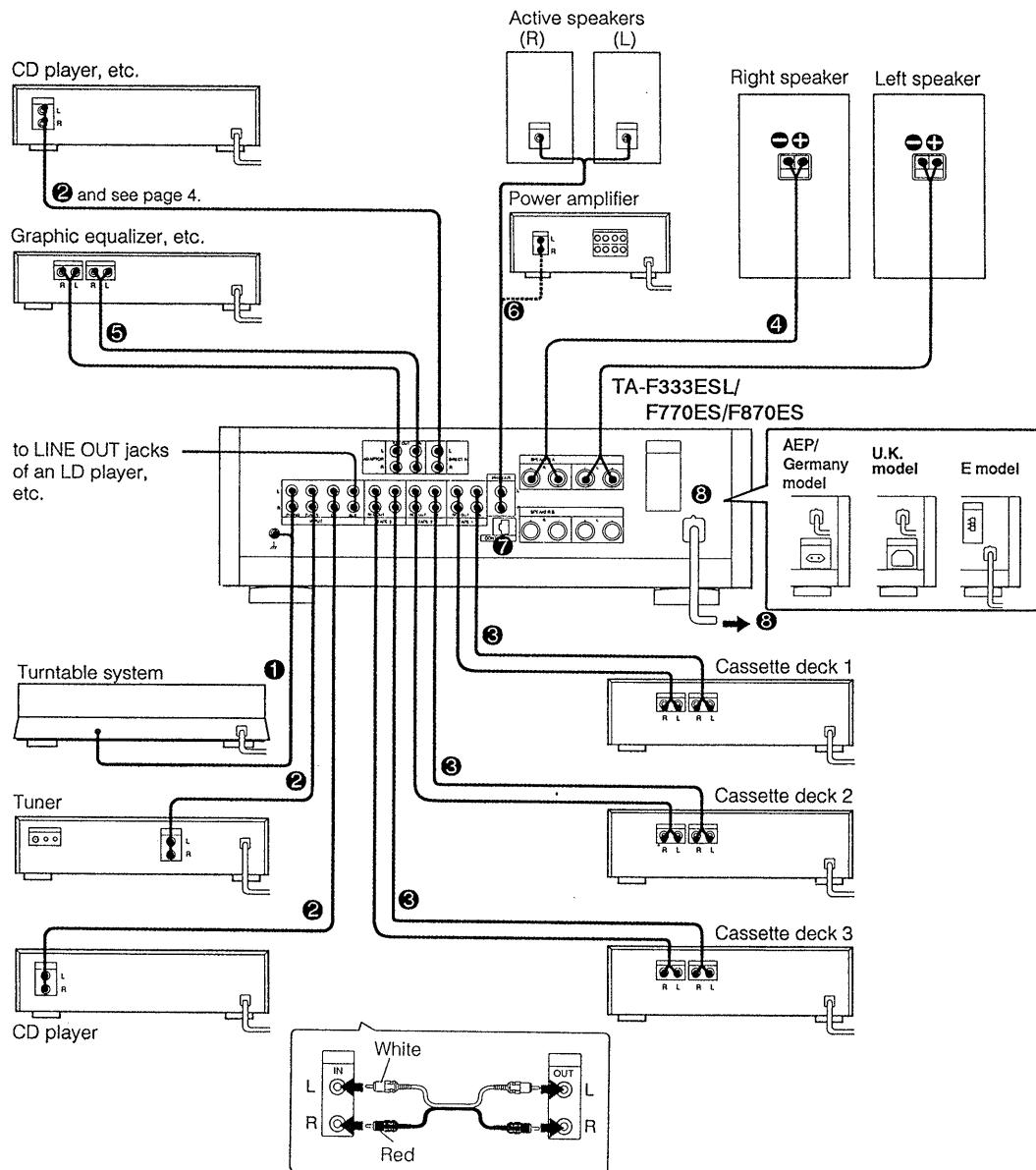
Avoid keeping the commander under extremely hot or humid locations.

System Connections

Connection Notes

- Connect the AC power cord last of all. Make sure that the power is off when making connections.
- Cord plugs and jacks are color coded. Red plugs and jacks are for right channel (R) and white ones for the left channel (L).
- Insert the cable connectors fully into the jacks. A loose connection may cause hum and noise.
- Connect the + and – cords of the speaker systems correctly to the + and – terminals of the amplifier respectively.

The numbers described ● correspond to the individual connecting diagram.



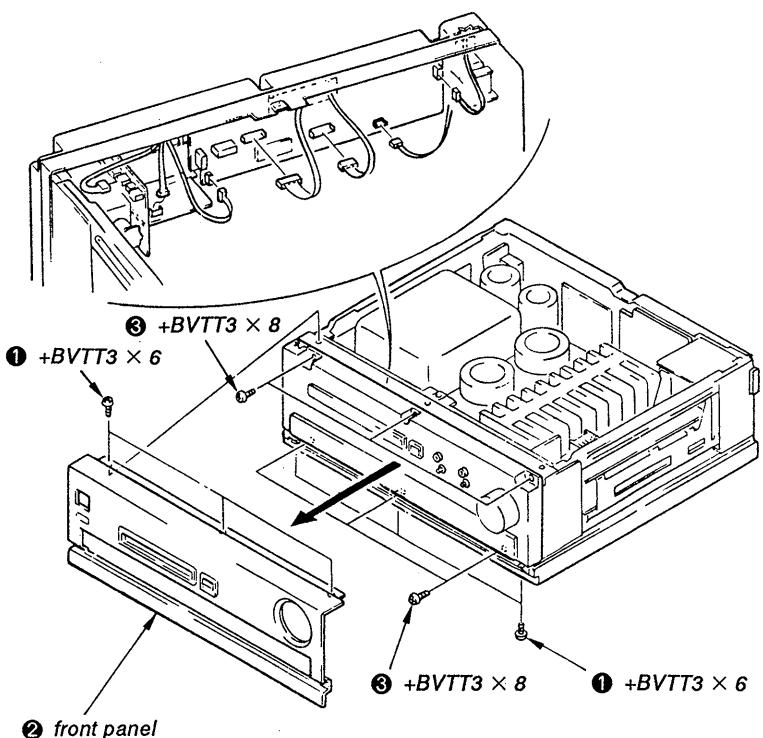
To enjoy pure sound

Connect a CD player or a tuner to the DIRECT IN jacks. DIRECT IN circuitry bypasses the INPUT SELECTOR and REC OUT SELECTOR so the signal is sent directly to the amplifier. Note that the program source input through DIRECT IN jacks cannot be processed through an adaptor nor be output through REC OUT jacks.

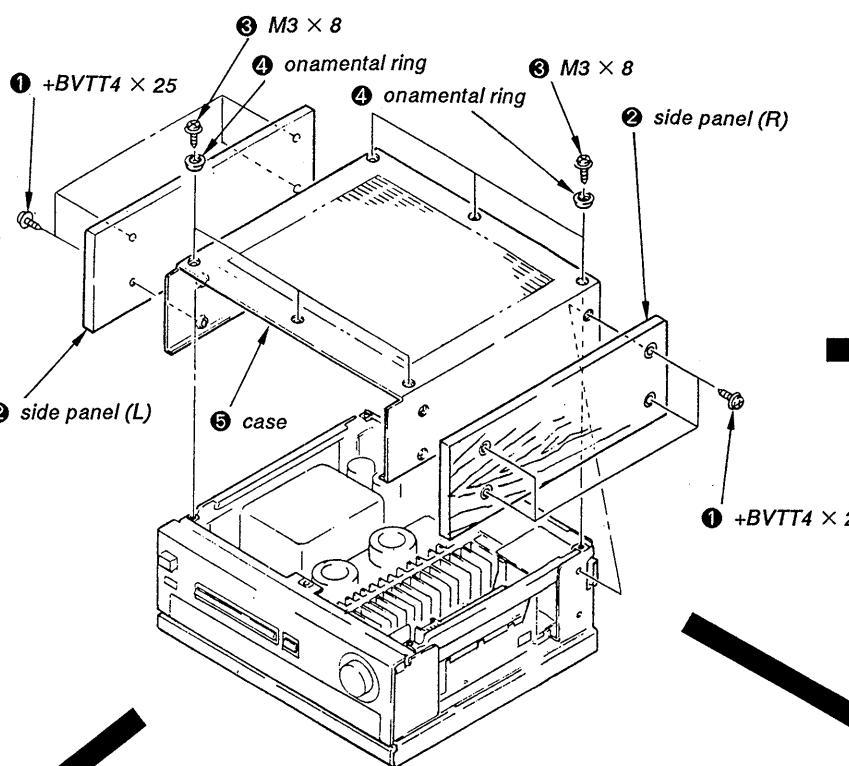
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

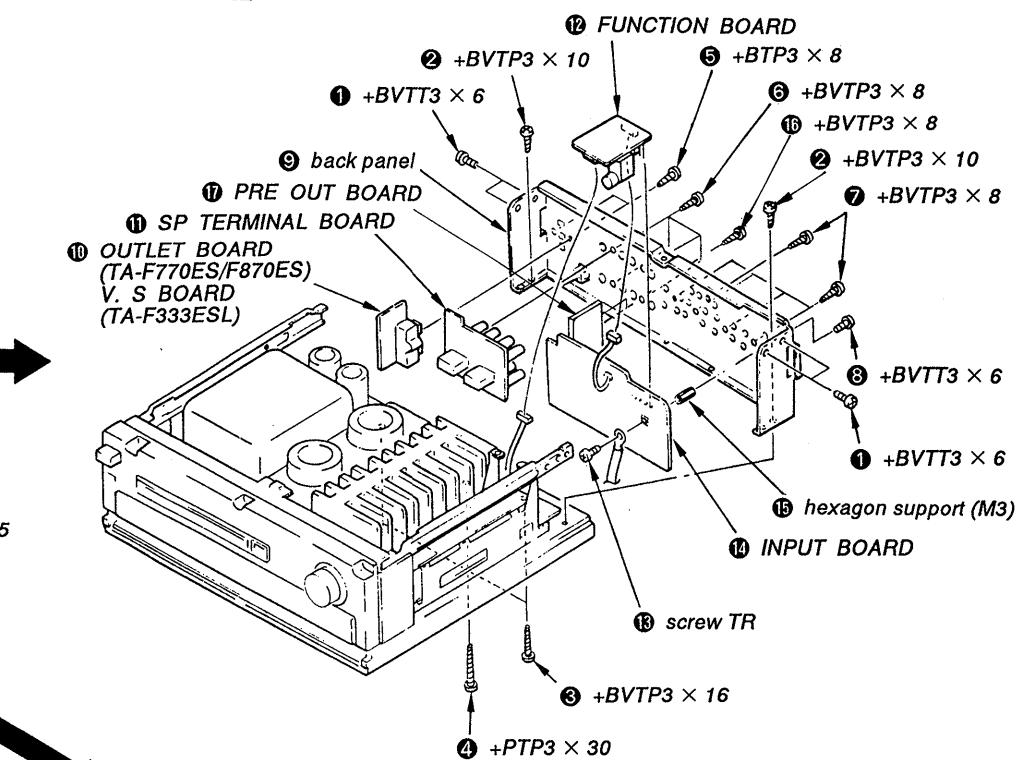
FRONT PANEL



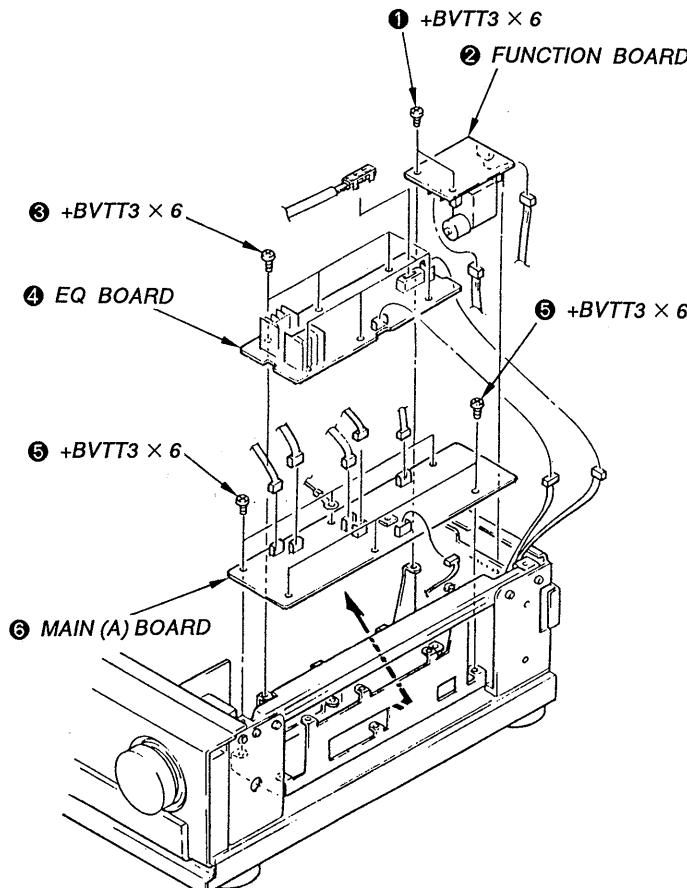
CASE



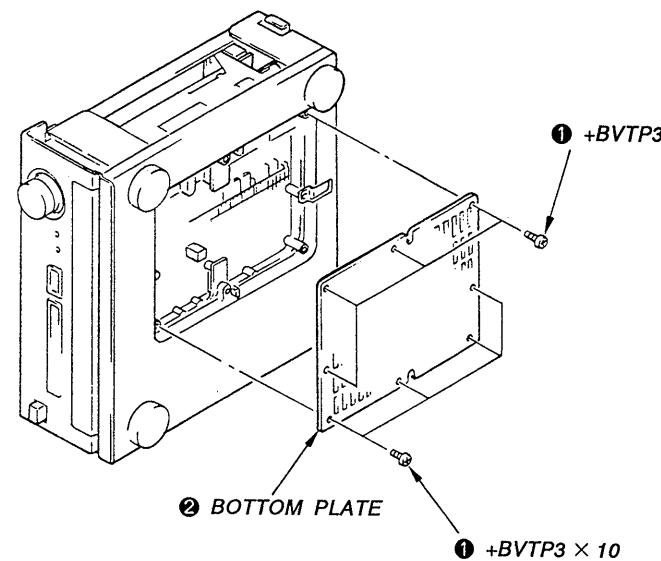
BACK PANEL



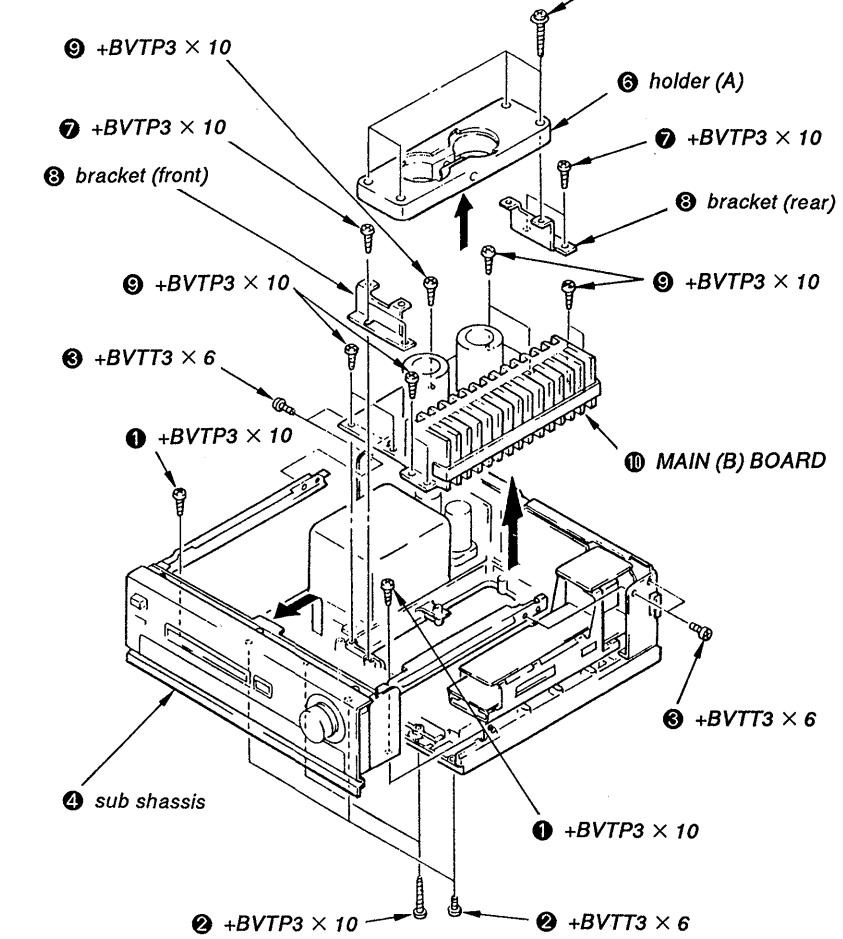
MAIN (A) BOARD



MAIN (B) BOARD CHECKING METHOD

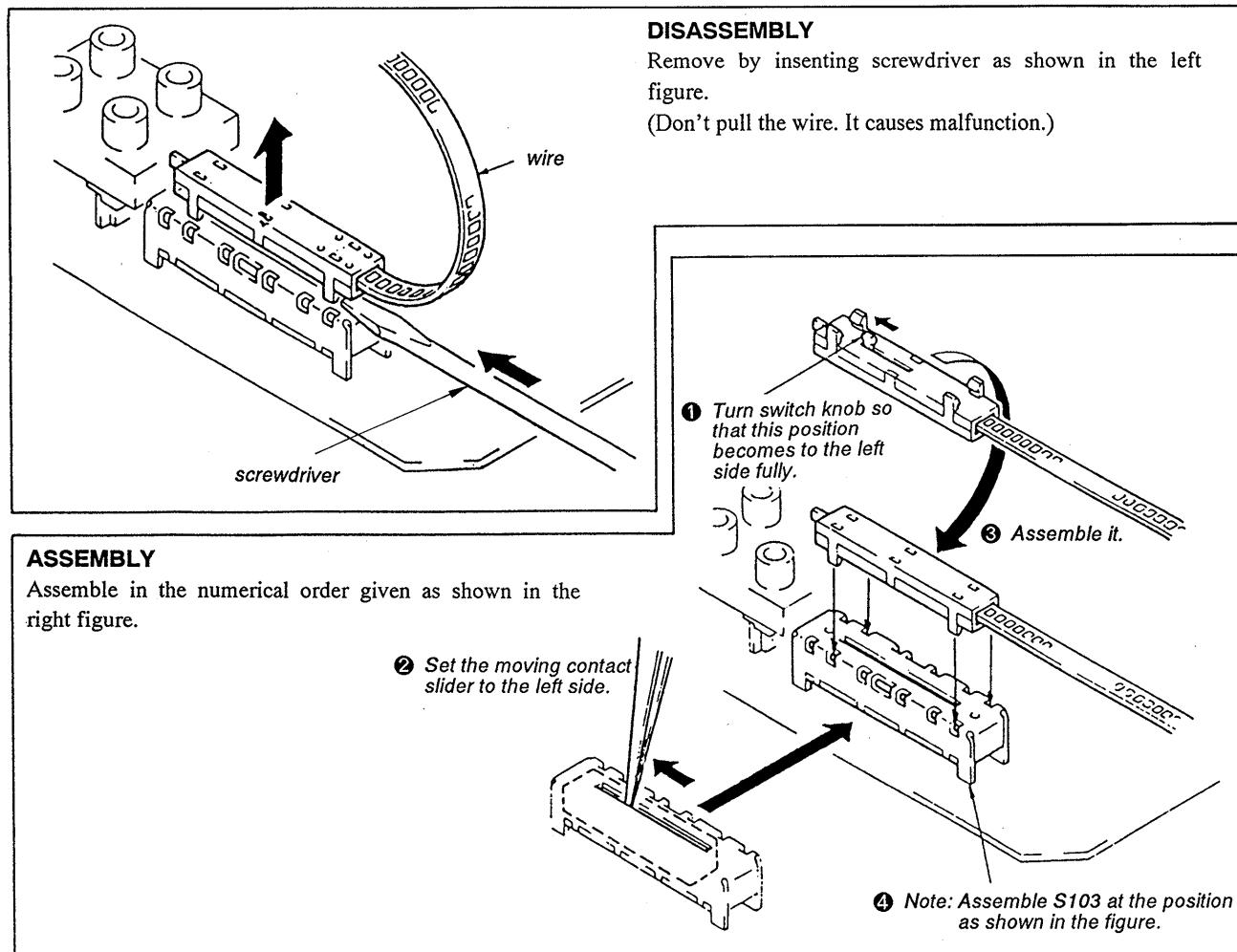


MAIN (B) BOARD



SECTION 3

SWITCH DISASSEMBLY AND ASSEMBLY



SECTION 4

ELECTRICAL ADJUSTMENTS

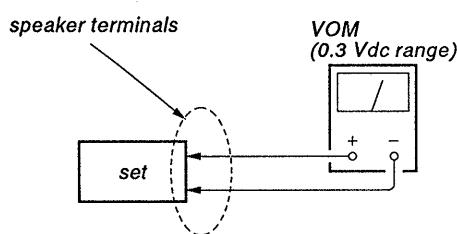
Note: adjustment should be performed 5 minutes later, after the power switch is on.

Offset Adjustment

Setting:

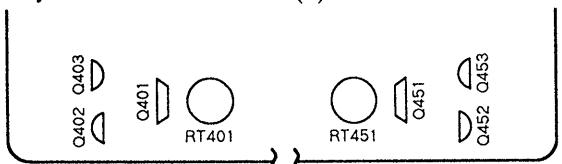
OPERATION switch: STEREO
Input signal: No signal input

Procedure:



Adjust RT401 (L-CH) and RT-451 (R-CH) for 0 V reading on the VOM.

Adjustment Location: MAIN (A) BOARD



Bias Current Adjustment

Setting:

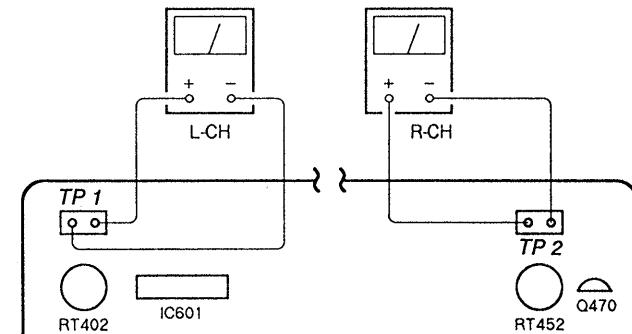
OPERATION switch: STEREO
Input signal: No signal input

Procedure:

Adjust RT402 (L-CH) and RT-452 (R-CH) so that VOM reading of TP-1 (L-CH), TP-2 (R-CH) become 35 mv.

Adjustment Location: MAIN (B) BOARD

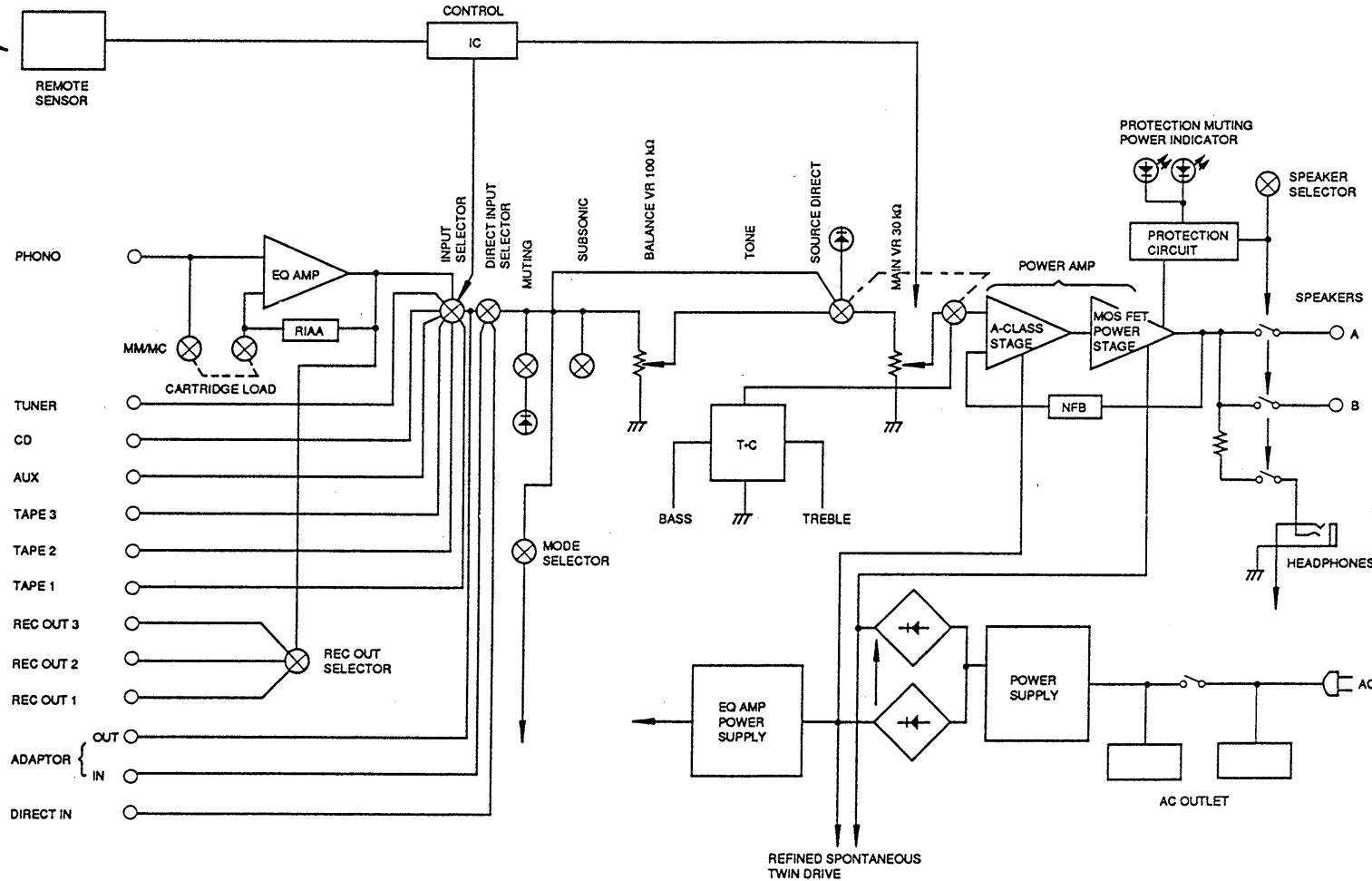
VOM (0.3 Vdc range) VOM (0.3 Vdc range)



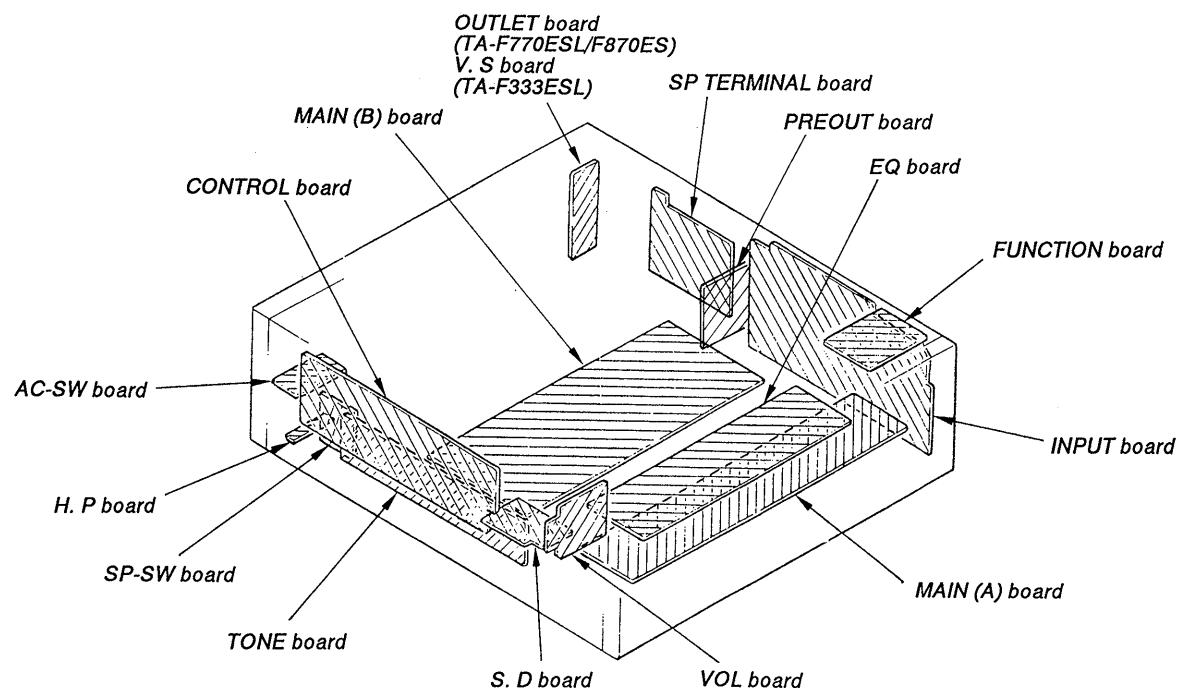
SECTION 5

DIAGRAMS

5-1. BLOCK DIAGRAM



5-2. CIRCUIT BOARDS LOCATION



Note on Printed Wiring Board:

Note:

- : parts extracted from the component side.

Note on Schematic Diagram:

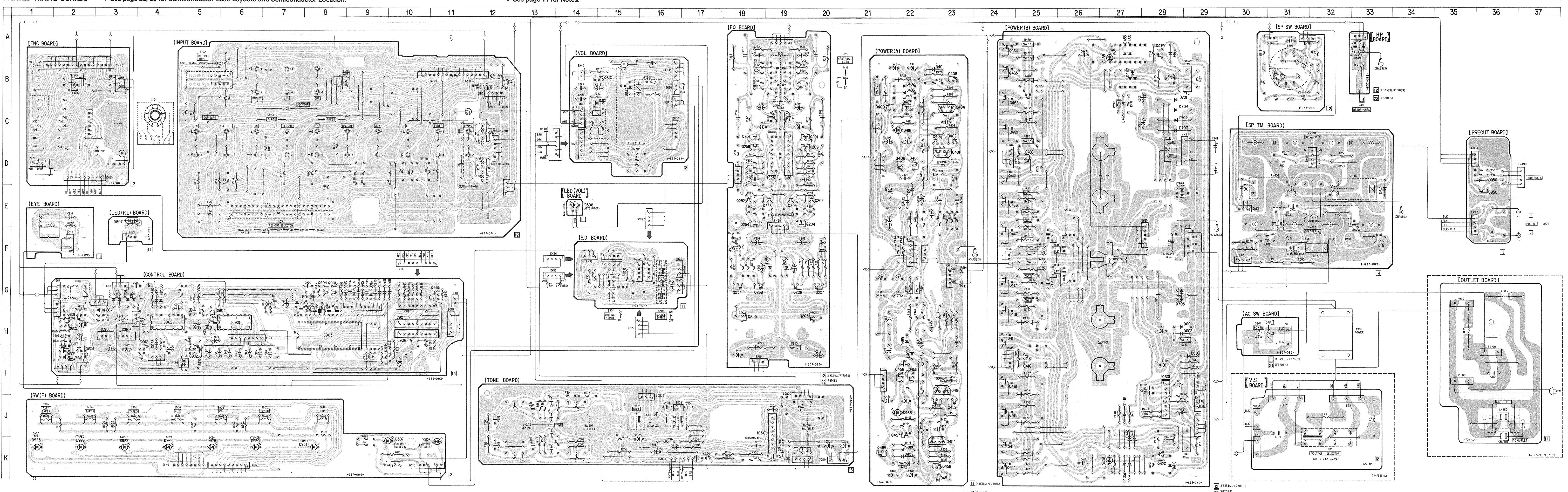
Note:

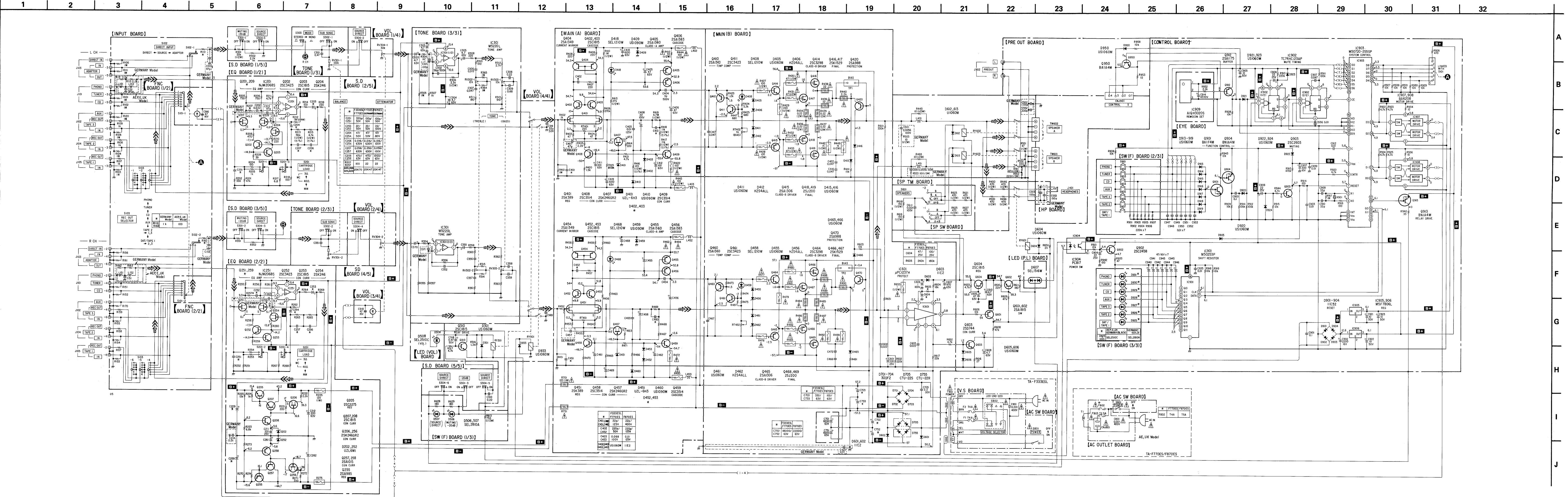
- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4} \text{W}$ or less unless otherwise specified.
- % : indicates tolerance.
- Components for right channel have same values as for left channel.
- : nonflammable resistor.
- : fusible resistor.

Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

- : B + Line.
- : B - Line.
- : adjustment for repair.
- Voltages are taken with a VOM (10 $\text{M}\Omega/\text{V}$). Voltage variations may be noted due to normal production tolerances.
- Signal path. : PHONO

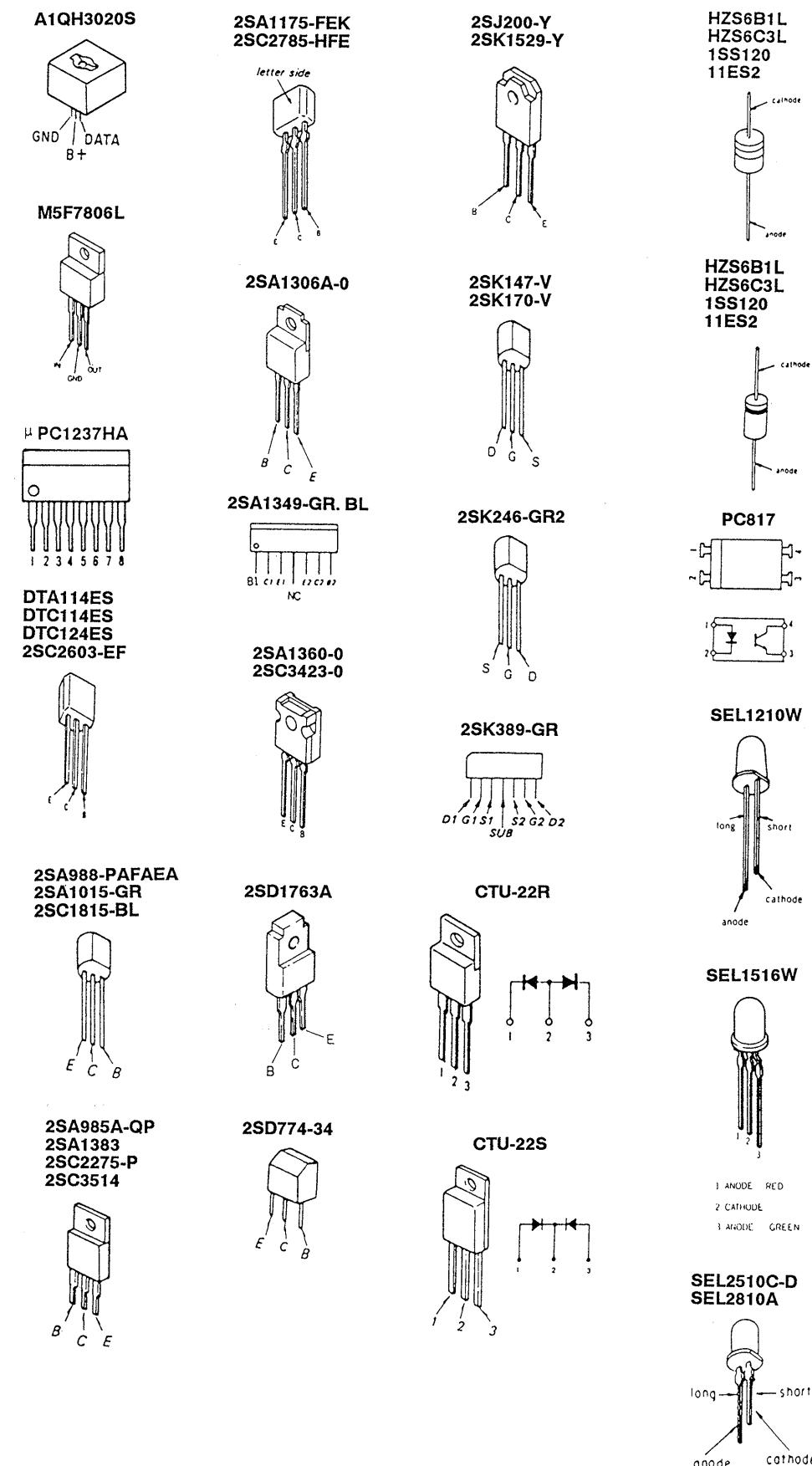
5-3. PRINTED WIRING BOARDS

- See page 22, 23 for Semiconductor Lead Layouts and Semiconductor Location




• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D202	F-19	IC601	I-28
D252	F-19	IC901	H-6
D301	C-14	IC902	H-4
D401	B-23	IC903	H-8
D402	B-22	IC904	I-5
D403	B-22	IC905	H-3
D405	K-27	IC906	H-3
D406	K-27	IC907	H-10
D408	K-27	IC908	H-10
D409	E-22	IC909	E-1
D410	E-22		
D411	K-27	Q201	C-19
D412	K-27	Q202	E-20
D415	J-27	Q203	E-19
D416	K-28	Q204	E-19
D418	C-22	Q205	H-20
D451	K-23	Q206	F-20
D452	K-22	Q207	G-20
D453	K-22	Q208	G-19
D455	A-27	Q209	D-19
D456	A-27	Q251	C-18
D458	A-27	Q252	E-18
D459	H-22	Q253	E-19
D460	H-22	Q254	E-18
D461	B-27	Q255	H-18
D462	B-27	Q256	F-18
D465	C-27	Q257	G-18
D466	A-28	Q258	G-18
D468	J-22	Q259	D-18
D506	K-11	Q310	B-15
D507	K-10	Q401	D-23
D508	E-14	Q402	C-23
D601	H-28	Q403	C-23
D602	H-28	Q404	C-23
D603	I-29	Q405	D-22
D604	G-3	Q406	D-22
D605	H-2	Q407	C-22
D606	I-2	Q408	B-23
D607	E-3	Q409	C-21
D612	E-33	Q410	I-25
D613	E-30	Q411	H-24
D701	C-28	Q414	K-24
D702	C-28	Q415	K-24
D703	C-28	Q416	H-24
D704	C-28	Q417	G-24
D705	G-28	Q418	J-24
D755	E-28	Q419	I-24
D901	G-3	Q420	K-28
D902	G-3	Q451	I-23
D903	G-3	Q452	J-23
D904	G-3	Q453	J-23
D905	H-5	Q454	K-23
D913	G-8	Q455	I-22
D914	G-9	Q456	I-22
D915	G-9	Q457	J-22
D916	G-9	Q458	K-23
D917	G-9	Q459	K-21
D918	G-10	Q460	D-25
D919	G-9	Q461	D-24
D920	G-4	Q464	A-24
D921	G-4	Q465	B-24
D922	G-7	Q466	E-24
D923	H-4	Q467	F-24
D924	G-5	Q468	C-24
D925	K-1	Q469	C-24
D926	K-2	Q470	A-28
D927	K-3	Q601	H-2
D928	K-4	Q602	H-2
D929	K-5	Q603	H-2
D930	K-6	Q604	H-2
D931	K-8	Q901	G-8
D933	B-15	Q902	H-5
D950	D-36	Q903	H-5
		Q904	G-8
IC201	D-19	Q912	H-4
IC251	D-19	Q913	G-11
IC301	J-19	Q950	E-36

• Semiconductor Lead Layouts


SECTION 6

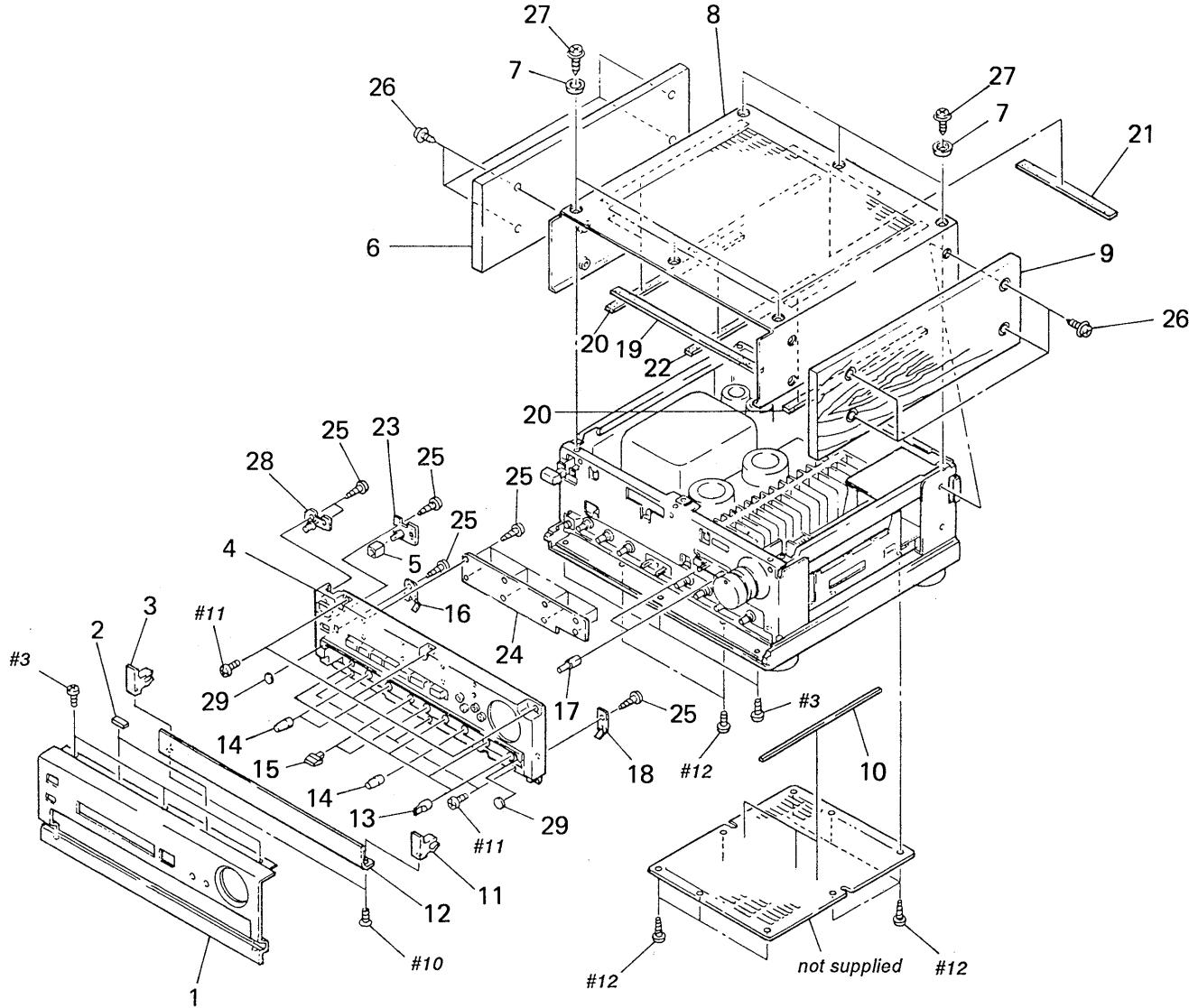
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) . . . (RED)
↑ ↑
Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

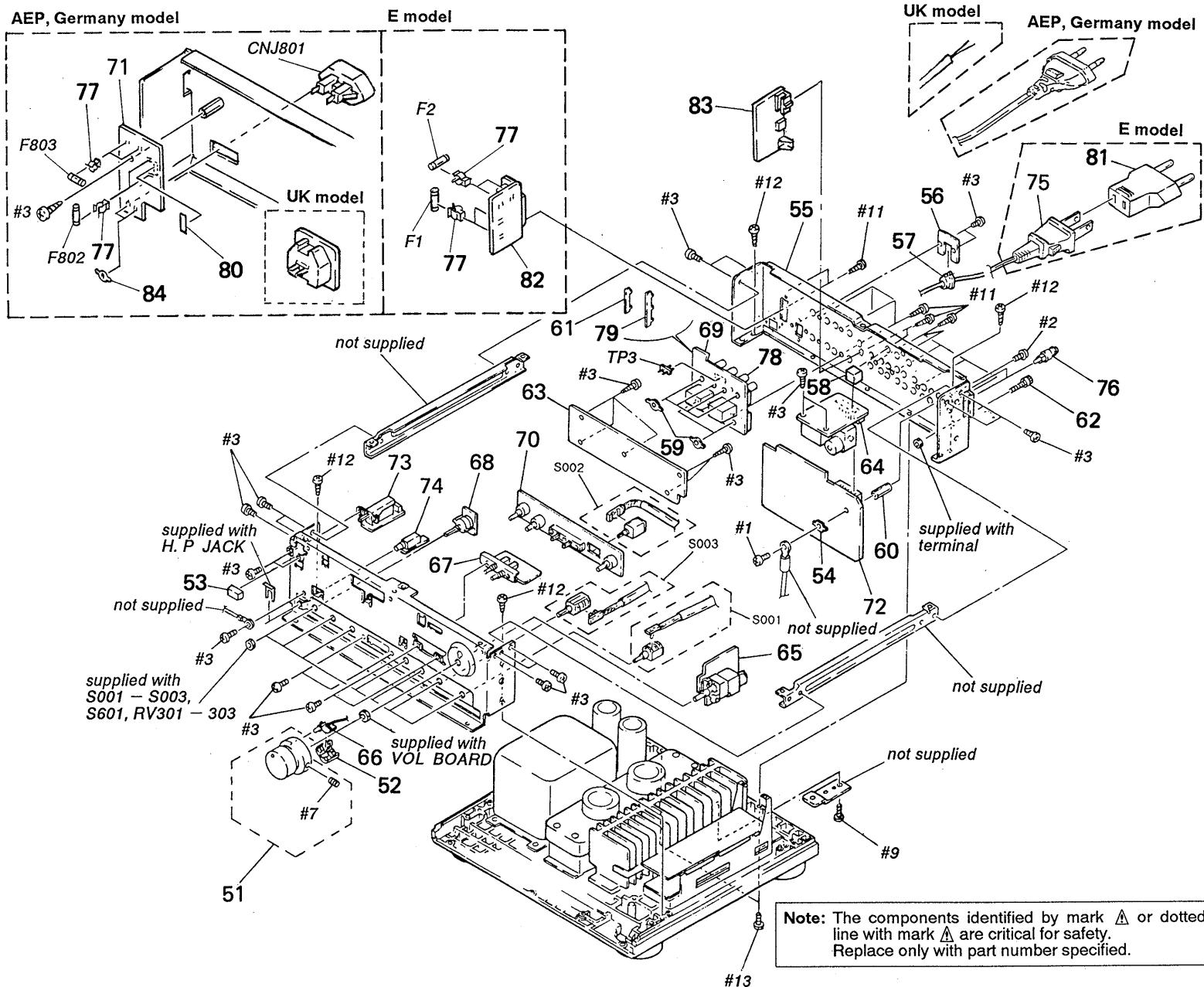
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

(1) CABINET SECTION



(2) FRONT CHASSIS SECTION

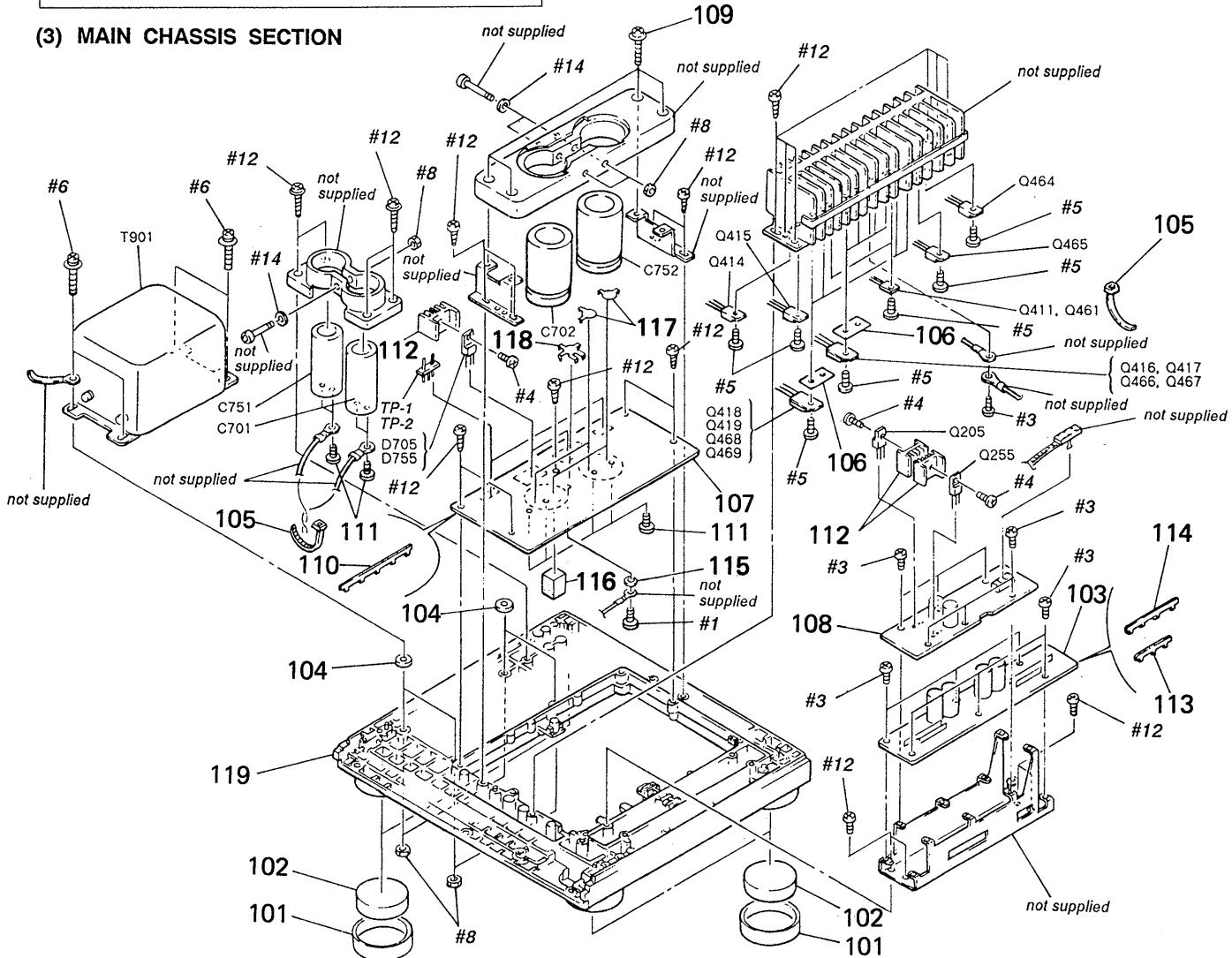
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	A-4323-753-A	PANEL ASSY, FRONT (F333ESL)		11	4-942-226-11	ARM (R) (F770ES(GOLD)/F870ES(GOLD))	
1	A-4325-074-A	PANEL ASSY, FRONT (F770ES(BLACK))		12	X-4941-192-1	LID ASSY (E)	
1	A-4325-077-A	PANEL ASSY, FRONT (F770ES(GOLD))		12	4-946-474-01	LID (F770ES(BLACK)/F870ES(BLACK))	
1	A-4325-089-A	PANEL ASSY, FRONT (F870ES(BLACK))		12	4-946-474-11	LID (F770ES(GOLD)/F870ES(GOLD))	
1	A-4325-090-A	PANEL ASSY, FRONT (F870ES(GOLD))		13	4-942-241-01	KNOB (SQUARE) (F333ESL/F770ES(BLACK)/F870ES(BLACK))	
1	A-4325-233-A	PANEL ASSY, FRONT (F770ES)		13	4-942-241-11	KNOB (SQUARE) (F770ES(GOLD)/F870ES(GOLD))	
2	9-911-840-XX	CUSHION, RUBBER		14	4-942-240-01	KNOB (ROUND) (F333ESL/F770ES(BLACK)/F870ES(BLACK))	
3	4-942-225-01	ARM (L) (F333ESL/F770ES(BLACK)/F870ES(BLACK))		14	4-942-240-11	KNOB (ROUND) (F770ES(GOLD)/F870ES(GOLD))	
3	4-942-225-11	ARM (L) (F770ES(GOLD)/F870ES(GOLD))		15	4-942-228-01	KNOB (3X13) (F333ESL/F770ES(BLACK)/F870ES(BLACK))	
4	X-4941-153-1	PANEL (BASE) ASSY (F333ESL/F770ES(BLACK):AE2, UK)		15	4-942-228-11	KNOB (3X13) (F770ES(GOLD)/F870ES(GOLD))	
4	X-4941-820-1	PANEL ASSY, BASE (F770ES(BLACK):AE1, Germany/E870ES(BLACK))		16	* 4-942-233-01	SPRING (L), PLATE	
4	X-4941-821-1	PANEL ASSY, BASE (F770ES(GOLD)/F870ES(GOLD))		17	4-931-641-01	BUTTON (DIA. 4) (F333ESL/F770ES(BLACK)/F870ES(BLACK))	
5	4-942-566-01	COVER, LED		17	4-931-641-11	BUTTON (DIA. 4) (F770ES(GOLD)/F870ES(GOLD))	
6	X-4885-922-1	PANEL (L) ASSY, SIDE (F770ES(BLACK):Germany/F870ES(BLACK))		18	* 4-942-234-01	SPRING (R), PLATE	
6	X-4941-857-1	PANEL (L) ASSY, SIDE (F333ESL/F770ES(BLACK):AEP)		19	* 4-916-782-71	DAMPER (F333ESL/F770ES)	
6	X-4941-889-1	PANEL (L) ASSY, SIDE (F770ES(GOLD)/F870ES(GOLD))		19	* 4-929-218-11	DAMPER (F870ES)	
7	4-923-474-01	RING, ORNAMENTAL (F333ESL/F770ES(BLACK)/F870ES(BLACK))		20	* 4-929-217-01	CUSHION (F870ES)	
7	4-928-025-21	ESCUTCHEON (TOP PLATE) (F770ES(GOLD)/F870ES(GOLD))		21	* 4-916-761-01	SHOOT, DAMPER (F870ES)	
8	* 4-931-944-31	CASE (F333ESL/F770ES(BLACK)/F870ES(BLACK))		22	4-916-782-21	SHOOT (A) (F870ES)	
8	* 4-931-944-51	CASE (F770ES(GOLD)/F870ES(GOLD))		23	* 1-637-092-11	LED (P. L) BOARD	
9	X-4885-823-1	PANEL (R) ASSY, SIDE (F770ES(GOLD)/F870ES(GOLD))		24	* 1-637-094-12	SW (F) BOARD	
9	X-4941-890-1	PANEL (R) ASSY, SIDE (F770ES(BLACK):Germany/F870ES(BLACK))		25	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
9	X-4941-958-1	PANEL (R) ASSY, SIDE (F333ESL/F770ES(BLACK):AEP)		26	4-847-802-00	SCREW (UK)	
10	4-916-782-11	SHOOT		26	4-885-979-11	SCREW (4X25) (AEP, E, Germany)	
11	4-942-226-01	ARM (R) (F333ESL/F770ES(BLACK)/F870ES(BLACK))		27	3-704-366-01	SCREW (CASE) (M3X8) (F333ESL/F770ES(BLACK)/F870ES(BLACK))	



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-4941-154-1	KNOB (DIA. 55) ASSY (F333ESL/F770ES(BLACK)/F870ES(BLACK))		70	* 1-637-090-12	TONE BOARD	
51	X-4941-817-1	KNOB (DIA. 55) ASSY (F770ES(GOLD)/F870ES(GOLD))		71	* 1-640-345-11	OUTLET BOARD (AEP, UK, Germany)	
52	* 4-901-919-01	HOUSE, LED LAMP		72	* 1-637-091-12	INPUT BOARD	
53	4-942-032-01	KNOB (POWER) (F333ESL/F770ES(BLACK)/F870ES(BLACK))		73	* 1-637-085-11	AC SW BOARD	
53	4-942-032-11	KNOB (POWER) (F770ES(GOLD)/F870ES(GOLD))		74	* 1-637-086-11	H. P BOARD	
54	* 4-835-639-00	PLATE, GROUND		75	▲1-559-272-21	CORD, POWER (UK)	
55	* 4-945-371-01	PANEL, BACK (F770ES(BLACK):Germany)		75	1-559-297-31	CORD, POWER (E)	
55	* 4-945-371-11	PANEL, BACK (UK)		75	▲1-575-953-11	CORD, POWER (AEP, Germany)	
55	* 4-945-371-21	PANEL, BACK (F770ES(BLACK):AEP)		76	▲1-506-113-00	SHORT PLUG	
55	* 4-945-371-31	PANEL, BACK (F770ES(GOLD)/F870ES(GOLD))		77	1-533-183-11	HOLDER, FUSE	
55	* 4-945-372-01	PANEL, BACK (E)		78	1-537-331-11	TERMINAL BOARD (SP) (Germany: F870ES)	
56	* 4-923-873-01	BRACKET, CORD STOPPER (F333ESL/F770ES(BLACK)/F870ES(BLACK))		78	* 1-537-378-11	TERMINAL BOARD (SP) (AE1, E, UK, Germany: F770ES)	
56	* 4-923-873-11	BRACKET, CORD STOPPER (F770ES(GOLD)/F870ES(GOLD))		78	* 1-537-380-11	TERMINAL BOARD (SP) (AE2)	
57	2-352-626-01	BUSHING, CORD		79	* 1-560-242-11	BUS BAR 3P	
58	9-911-843-XX	CUSHION (TU)		80	3-701-947-18	LABEL, FUSE	
59	* 4-843-416-11	PLATE, FIXED, CAP		81	▲1-569-007-11	ADAPTER, CONVERSION 2P (E)	
60	* 2-280-622-51	SUPPORT (M3), HEXAGON		82	* 1-637-837-12	V. S BOARD (E)	
61	* 1-560-242-61	BUS BAR 2P		83	* 1-639-110-11	PREOUT BOARD	
62	* 1-535-691-21	TERMINAL (F333ESL/F770ES)		84	* 4-923-814-01	PLATE, CONNECTION (AEP, UK, Germany)	
62	* 1-535-691-31	TERMINAL (F870ES)		CNJ801	▲1-526-794-11	OUTLET, AC (AEP, Germany)	
63	* A-4345-485-A	CONTROL BOARD, COMPLETE		CNJ801	▲1-526-751-00	OUTLET, AC (UK)	
64	* 1-637-081-11	FUNCTION BOARD (F870ES)		F1	▲1-532-350-00	FUSE, TIME-LAG 4A (F333ESL/F770ES)	
64	* 1-637-081-13	FUNCTION BOARD (F333ESL/F770ES)		F2	▲1-532-350-00	FUSE, TIME-LAG 4A (F333ESL/F770ES)	
65	* 1-637-082-12	VOL BOARD		F802	▲1-532-299-00	FUSE, TIME-LAG 5A (F870ES)	
66	* 1-637-084-11	LED (VOL) BOARD		F802	▲1-532-350-00	FUSE, TIME-LAG 4A (F333ESL/F770ES)	
67	* 1-637-087-11	S. D BOARD		F803	▲1-532-286-00	FUSE, TIME-LAG 2.5A (F770ES/F870ES)	
68	* 1-637-088-12	SP-SW BOARD		S001	1-572-546-11	SWITCH, ROTARY SLIDE (REMOTE)	
69	* 1-637-089-12	SP TERMINAL BOARD		S002	1-572-547-11	SWITCH, ROTARY SLIDE (REMOTE)	
				S003	1-572-548-11	SWITCH, ROTARY SLIDE (REMOTE)	
				TP3	1-535-139-00	BASE POST 14MM (10MM PITCH) 2P	

Note: The components identified by mark or dotted line with mark are critical for safety.
Replace only with part number specified.

(3) MAIN CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	4-931-966-11	RING, ORNAMENTAL (F870ES(GOLD))		C701	1-125-653-11	CAP, ELECT 8200MF (F870ES)	
101	4-931-967-02	RING, ORNAMENTAL (F333ESL/F770ES(BLACK))		C701	1-125-654-11	CAP, ELECT 8200MF (F333ESL/F770ES)	
101	4-931-967-21	RING, ORNAMENTAL (F770ES(GOLD))		C702	1-125-655-11	CAP, ELECT 22000MF (F870ES)	
101	9-910-999-33	RING, ORNAMENTAL (F870ES(BLACK))		C702	1-125-656-11	CAP, ELECT 18000MF (F333ESL/F770ES)	
102	4-908-888-01	FOOT, TUNING (F333ESL/F770ES)		C751	1-125-653-11	CAP, ELECT 8200MF (F870ES)	
102	4-908-888-11	FOOT, TUNING (F870ES)		C751	1-125-654-11	CAP, ELECT 8200MF (F333ESL/F770ES)	
103	* A-4345-325-A	MAIN (A) BOARD, COMPLETE (E333ESL/F770ES:AEP, UK)		C752	1-125-656-11	CAP, ELECT 18000MF (F333ESL/F770ES)	
103	* A-4345-331-A	MAIN (A) BOARD, COMPLETE (F770ES:Germany)		C752	1-125-655-11	CAP, ELECT 22000MF (F870ES)	
103	* A-4345-358-A	MAIN (A) BOARD, COMPLETE (F870ES)		D705	8-719-300-27	D10DE CTU-22S	
104	4-931-976-01	WASHER (BS)		D755	8-719-300-25	D10DE CTU-22R	
105	3-655-653-21	BAND (TAITON), BINDING		0205	8-729-127-53	TRANSISTOR 2SC2275-P	
106	4-901-949-01	SHEET, INSULATING		0255	8-729-141-10	TRANSISTOR 2SA985-P	
107	* A-4345-326-A	MAIN (B) BOARD, COMPLETE (E333ESL/F770ES:AEP, UK)		0411	8-729-203-45	TRANSISTOR 2SC3423-0	
107	A-4345-332-A	MAIN (B) BOARD, COMPLETE (F770ES:Germany)		0414	8-729-208-72	TRANSISTOR 2SD1763A	
107	* A-4345-359-A	MAIN (B) BOARD, COMPLETE (F870ES)		0415	8-729-208-38	TRANSISTOR 2SA1306A-0	
108	* A-4345-327-A	EQ BOARD, COMPLETE (E333ESL/F770ES:AEP, UK)		0416	8-729-232-45	TRANSISTOR 2SK1529-Y	
108	* A-4345-333-A	EQ BOARD, COMPLETE (F770ES:Germany)		0417	8-729-232-45	TRANSISTOR 2SK1529-Y	
108	* A-4345-360-A	EQ BOARD, COMPLETE (F870ES)		0418	8-729-232-46	TRANSISTOR 2SJ200-Y	
109	4-921-437-01	SCREW (M3X20), TAPPING		0419	8-729-232-46	TRANSISTOR 2SJ200-Y	
110	* 1-560-242-31	BUS BAR 5P		0461	8-729-203-45	TRANSISTOR 2SC3423-0	
111	* 4-931-964-01	SCREW (M4X6)		0464	8-729-208-72	TRANSISTOR 2SD1763A	
112	* 4-921-402-01	HEAT SINK		0465	8-729-208-38	TRANSISTOR 2SA1306A-0	
113	* 1-560-242-11	BUS BAR 3P		0466	8-729-232-45	TRANSISTOR 2SK1529-Y	
114	* 1-560-242-21	BUS BAR 4P		0467	8-729-232-45	TRANSISTOR 2SK1529-Y	
115	4-309-378-00	WASHER		0468	8-729-232-46	TRANSISTOR 2SJ200-Y	
116	* 4-931-970-01	CUSHION		0469	8-729-232-46	TRANSISTOR 2SJ200-Y	
117	* 3-346-266-21	PLATE, GROUND		T901	▲1-450-485-11	TRANSFORMER, POWER (UK)	
118	* 4-916-791-01	PLATE, GROUND, 5P		T901	▲1-450-486-11	TRANSFORMER, POWER (F333ESL)	
119	X-4941-233-1	CHASSIS ASSY (F333ESL/F770ES)		T901	▲1-450-487-11	TRANSFORMER, POWER (AE1, Germany:F770ES)	
119	X-4941-234-1	CHASSIS ASSY (F870ES)		T901	▲1-450-488-11	TRANSFORMER, POWER (AE2, AEP:F770ES)	
117				T901	▲1-450-489-11	TRANSFORMER, POWER (Germany:F870ES)	
118				TP1	1-535-139-00	BASE POST 14MM (10MM PITCH) 2P (F870ES)	
119				TP2	1-535-139-00	BASE POST 14MM (10MM PITCH) 2P (F870ES)	

SECTION 7

ELECTRICAL PARTS LIST

MAIN (A)

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- **RESISTORS**
All resistors are in ohms.
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- **SEMICONDUCTORS**
In each case, u: μ , for example:
uA...: μ A...; uPA...: μ PA...;
uPB...: μ PB...; uPC...: μ PC...;
uPD...: μ PD...
- **CAPACITORS**
uF: μ F
- **COILS**
uH: μ H

The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
		* A-4345-325-A MAIN (A) BOARD, COMPLETE				C453	1-104-319-11	POLYSTYRENE	10000PF	10%	125V(F870ES)
		*****				C453	1-137-337-21	FILM	0.068uF	2%	100V(F333ESL/F770ES)
		(F333ESL/F770ES:AEP, UK)				C454	1-107-044-00	MICA	3.3PF		500V
		* A-4345-331-A MAIN (A) BOARD, COMPLETE(F770ES:Germany)				C455	1-124-918-11	ELECT	47uF	20%	63V
		*****				C456	1-124-918-11	ELECT	47uF	20%	63V
		* A-4345-358-A MAIN (A) BOARD, COMPLETE (F870ES)				C457	1-104-274-11	POLYSTYRENE	47PF	10%	50V
		*****				C458	1-124-748-11	ELECT	22uF	20%	100V
		* 1-560-242-11 BUS BAR 3P				C460	1-104-321-11	POLYSTYRENE	22PF	10%	400V(F870ES)
		* 1-560-242-21 BUS BAR 4P				C460	1-104-327-11	POLYSTYRENE	22PF	10%	125V
		(F333ESL/F770ES)									
		< CAPACITOR >				C461	1-124-130-00	ELECT	100uF	20%	63V
C401	1-104-321-11	POLYSTYRENE	22PF	10%	400V(F870ES)	C462	1-124-130-00	ELECT	100uF	20%	63V
C401	1-104-327-11	POLYSTYRENE	22PF	10%	125V	C468	1-124-922-11	ELECT	1000uF	20%	63V
C402	1-104-233-00	POLYSTYRENE	220PF	10%	125V(F870ES)	C469	1-124-922-11	ELECT	1000uF	20%	63V
C402	1-104-286-11	POLYSTYRENE	220PF	5%	50V						
		(F333ESL/F770ES)									
C403	1-104-319-11	POLYSTYRENE	10000PF	10%	125V(F870ES)	D401	8-719-933-41	DIODE	HZS6C3L		
C403	1-137-337-21	FILM	0.068uF	2%	100V(F333ESL/F770ES)	D402	8-719-200-82	DIODE	11ES2 (F870ES)		
C404	1-107-044-00	MICA	3.3PF		500V	D402	8-719-912-20	DIODE	1SS120 (F333ESL/F770ES)		
C405	1-124-918-11	ELECT	47uF	20%	63V	D403	8-719-200-82	DIODE	11ES2 (F870ES)		
C406	1-124-918-11	ELECT	47uF	20%	63V	D403	8-719-912-20	DIODE	1SS120 (F333ESL/F770ES)		
C407	1-104-274-11	POLYSTYRENE	47PF	10%	50V	D409	8-719-815-85	DIODE	1S1585		
		(F770ES:Germany/F870ES)				D410	8-719-815-85	DIODE	1S1585		
C408	1-124-748-11	ELECT	22uF	20%	100V	D418	8-719-303-13	DIODE	SEL1210W		
C410	1-104-321-11	POLYSTYRENE	22PF	10%	400V(F870ES)	D451	8-719-933-41	DIODE	HZS6C3L		
C410	1-104-327-11	POLYSTYRENE	22PF	10%	125V	D452	8-719-200-82	DIODE	11ES2 (F870ES)		
		(F333ESL/F770ES)				D452	8-719-912-20	DIODE	1SS120 (F333ESL/F770ES)		
C411	1-124-130-00	ELECT	100uF	20%	63V	D453	8-719-200-82	DIODE	11ES2 (F870ES)		
C412	1-124-130-00	ELECT	100uF	20%	63V	D453	8-719-912-20	DIODE	1SS120 (F333ESL/F770ES)		
C418	1-124-922-11	ELECT	1000uF	20%	63V	D459	8-719-815-85	DIODE	1S1585		
C419	1-124-922-11	ELECT	1000uF	20%	63V	D460	8-719-815-85	DIODE	1S1585		
C451	1-104-321-11	POLYSTYRENE	22PF	10%	400V(F870ES)	D468	8-719-303-13	DIODE	SEL1210W		
C451	1-104-327-11	POLYSTYRENE	22PF	10%	125V						
C452	1-104-233-00	POLYSTYRENE	220PF	10%	125V(F870ES)	EH15	* 1-564-507-11	PLUG, CONNECTOR	4P		
C452	1-104-286-11	POLYSTYRENE	220PF	5%	50V	EH21	* 1-564-507-11	PLUG, CONNECTOR	4P		
		(F333ESL/F770ES)				EH22	* 1-564-507-11	PLUG, CONNECTOR	4P		
						EH23	* 1-564-506-11	PLUG, CONNECTOR	3P		
						EH24	* 1-564-508-11	PLUG, CONNECTOR	5P		

MAIN (A)

MAIN (B)

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark
< COIL >									
L402	* 1-428-203-11	COIL, AIR-CORE			R445	1-219-022-11	FUSIBLE	100	5% 1/2W
L403	* 1-428-203-11	COIL, AIR-CORE			R451	1-246-545-00	CARBON	1.0M	5% 1/4W
L452	* 1-428-203-11	COIL, AIR-CORE			R452	1-247-713-11	CARBON	1K	5% 1/4W
L453	* 1-428-203-11	COIL, AIR-CORE			R453	1-249-520-11	CARBON	47	5% 1/4W
					R454	1-249-520-11	CARBON	47	5% 1/4W
< TRANSISTOR >									
Q401	8-729-203-21	TRANSISTOR 2SK389-GR			R455	1-247-717-11	CARBON	2.2K	5% 1/4W
Q402	8-729-281-54	TRANSISTOR 2SC1815-BL			R456	1-246-531-00	CARBON	270K	5% 1/4W
Q403	8-729-281-54	TRANSISTOR 2SC1815-BL			R457	1-247-704-11	CARBON	220	5% 1/4W
Q404	8-729-232-00	TRANSISTOR 2SA1349-GRBL			R458	1-219-030-11	FUSIBLE	220	5% 1/2W
Q405	8-729-209-17	TRANSISTOR 2SA1360-0			R459	1-219-030-11	FUSIBLE	220	5% 1/2W
Q406	8-729-104-91	TRANSISTOR 2SA1383			R460	1-214-937-00	METAL	1M	1% 1/2W
Q407	8-729-201-56	TRANSISTOR 2SK246-GR2			R462	1-219-010-11	FUSIBLE	33	5% 1/2W
Q408	8-729-104-18	TRANSISTOR 2SC3514			R463	1-249-490-11	CARBON	27K	5% 1/2W
Q409	8-729-104-18	TRANSISTOR 2SC3514			R464	1-247-704-11	CARBON	220	5% 1/4W
Q451	8-729-203-21	TRANSISTOR 2SK389-GR			R465	1-246-531-00	CARBON	270K	5% 1/4W
Q452	8-729-281-54	TRANSISTOR 2SC1815-BL			R466	1-247-740-11	CARBON	120	5% 1/2W (F333ESL/F770ES)
Q453	8-729-281-54	TRANSISTOR 2SC1815-BL			R466	1-259-533-11	CARBON	120	1% 1/2W (F870ES)
Q454	8-729-232-00	TRANSISTOR 2SA1349-GRBL			R467	1-259-580-11	CARBON	11K	5% 1/2W
Q455	8-729-209-17	TRANSISTOR 2SA1360-0			R468	1-259-580-11	CARBON	11K	5% 1/2W
Q456	8-729-104-91	TRANSISTOR 2SA1383			R469	1-259-503-11	CARBON	4.7M	5% 1/2W
Q457	8-729-201-56	TRANSISTOR 2SK246-GR2			R470	1-249-556-11	CARBON	1.5K	5% 1/4W
Q458	8-729-104-18	TRANSISTOR 2SC3514			R471	1-247-721-11	CARBON	4.7K	5% 1/4W
Q459	8-729-104-18	TRANSISTOR 2SC3514			R472	1-219-022-11	FUSIBLE	100	5% 1/2W
< RESISTOR >									
R401	1-246-545-00	CARBON	1.0M	5% 1/4W	R470	1-219-024-91	FUSIBLE	120	5% 1/2W
R402	1-247-713-11	CARBON	1K	5% 1/4W	R471	1-219-024-91	FUSIBLE	120	5% 1/2W
R403	1-249-520-11	CARBON	47	5% 1/4W	< VARIABLE RESISTOR >				
R404	1-249-520-11	CARBON	47	5% 1/4W	RT401	1-237-498-21	RES, ADJ, METAL FILM	220	
R405	1-247-717-11	CARBON	2.2K	5% 1/4W	RT451	1-237-498-21	RES, ADJ, METAL FILM	220	

R406	1-246-531-00	CARBON	270K	5% 1/4W	* A-4345-326-A MAIN (B) BOARD, COMPLETE				
R407	1-247-704-11	CARBON	220	5% 1/4W	*****				
R408	1-219-030-11	FUSIBLE	220	5% 1/2W	(F333ESL/F770ES:AEP, UK)				
R409	1-219-030-11	FUSIBLE	220	5% 1/2W	* A-4345-332-A MAIN (B) BOARD, COMPLETE(F770ES:Germany)				
R410	1-214-937-00	METAL	1M	1% 1/2W	*****				
R412	1-219-010-11	FUSIBLE	33	5% 1/2W	* A-4345-359-A MAIN (B) BOARD, COMPLETE (F870ES)				
R413	1-249-490-11	CARBON	27K	5% 1/2W	*****				
R414	1-247-704-11	CARBON	220	5% 1/4W	*****				
R415	1-246-531-00	CARBON	270K	5% 1/4W	* 1-560-242-31 BUS BAR 5P				
R416	1-247-740-11	CARBON	120	5% 1/2W (F333ESL/F770ES)	* 3-346-266-21 PLATE, GROUND				
R416	1-259-533-11	CARBON	120	1% 1/2W (F870ES)	* 4-916-791-01 PLATE, GROUND, 5P				
R417	1-259-580-11	CARBON	11K	5% 1/2W	* 4-921-402-01 HEAT SINK				
R418	1-259-580-11	CARBON	11K	5% 1/2W	7-682-548-09 SCREW +B 3X8				
R419	1-259-503-11	CARBON	4.7M	5% 1/2W	*****				
R420	1-249-556-11	CARBON	1.5K	5% 1/4W	* CAPACITOR >				
R421	1-247-721-11	CARBON	4.7K	5% 1/4W	C416	1-136-161-00	FILM	0.047uF	5% 50V
R422	1-219-022-11	FUSIBLE	100	5% 1/2W	C417	1-136-161-00	FILM	0.047uF	5% 50V
R444	1-219-022-11	FUSIBLE	100	5% 1/2W					

MAIN (B)

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
C422	1-136-161-00	FILM	0.047uF	5%	50V	< TRANSISTOR >					
C423	1-161-379-00	CERAMIC	0.01uF	20%	25V						
	(F770ES:Germany/F870ES)						Q410	8-729-209-17	TRANSISTOR	2SA1360-0	
C466	1-136-161-00	FILM	0.047uF	5%	50V						
C467	1-136-161-00	FILM	0.047uF	5%	50V						
C472	1-136-161-00	FILM	0.047uF	5%	50V						
< RESISTOR >											
C601	1-123-334-00	ELECT	220uF	20%	25V						
C602	1-136-157-00	FILM	0.022uF	5%	50V						
C603	1-136-157-00	FILM	0.022uF	5%	50V						
C604	1-124-122-11	ELECT	100uF	20%	50V(F870ES)						
C604	1-124-910-11	ELECT	47uF	20%	50V(F333ESL/F770ES)						
C606	1-123-380-00	ELECT	1uF	20%	100V						
C607	1-126-066-11	ELECT	470uF	20%	63V						
C703	1-128-201-11	ELECT	100uF	20%	63V(F870ES)						
C703	1-124-920-11	ELECT	330uF	20%	63V(F333ESL/F770ES)						
C705	1-137-213-11	FILM	2.2uF	5%	100V						
C753	1-124-920-11	ELECT	330uF	20%	63V(F333ESL/F770ES)						
C753	1-128-201-11	ELECT	100uF	20%	63V(F870ES)						
< DIODE >											
D405	8-719-912-20	DIODE	1SS120								
D406	8-719-985-53	DIODE	HZS4ALL								
D408	8-719-303-13	DIODE	SEL1210W								
D411	8-719-912-20	DIODE	1SS120								
D412	8-719-985-53	DIODE	HZS4ALL								
D415	8-719-912-20	DIODE	1SS120								
D416	8-719-912-20	DIODE	1SS120								
D455	8-719-912-20	DIODE	1SS120								
D456	8-719-985-53	DIODE	HZS4ALL								
D458	8-719-303-13	DIODE	SEL1210W								
D461	8-719-912-20	DIODE	1SS120								
D462	8-719-985-53	DIODE	HZS4ALL								
D465	8-719-912-20	DIODE	1SS120								
D466	8-719-912-20	DIODE	1SS120								
D601	8-719-200-82	DIODE	11ES2								
D602	8-719-200-82	DIODE	11ES2								
D603	8-719-200-82	DIODE	11ES2								
D701	8-719-230-02	DIODE	30DF2								
D702	8-719-230-02	DIODE	30DF2								
D703	8-719-230-02	DIODE	30DF2								
D704	8-719-230-02	DIODE	30DF2								
D705	8-719-300-27	DIODE	CTU-22S								
D755	8-719-300-25	DIODE	CTU-22R								
< CONNECTOR >											
EH25	* 1-564-508-11	PLUG, CONNECTOR	5P								
EH41	* 1-564-505-11	PLUG, CONNECTOR	2P								
< IC >											
IC601	8-759-111-68	IC	uPC1237HA								

Note: The components identified by mark **▲** or dotted line with mark **△** are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R602	1-247-887-00	CARBON	220K	5%	1/4W	C207	1-137-333-31	FILM	0.056uF	2%	100V(F870ES)
R603	1-247-725-11	CARBON	10K	5%	1/4W	C207	1-137-335-31	FILM	0.056uF	2%	630V(F333ESL/F770ES)
R604	1-249-461-11	CARBON	18K	5%	1/4W	C209	1-124-922-11	ELECT	1000uF	20%	63V(F870ES)
R605	1-249-606-11	CARBON	180K	5%	1/4W (F870ES)	C209	1-126-066-11	ELECT	470uF	20%	63V(F333ESL/F770ES)
R605	1-249-609-11	CARBON	240K	5%	1/4W(F333ESL/F770ES)	C211	1-124-122-11	ELECT	100uF	20%	50V
R617	1-249-462-11	CARBON	22K	5%	1/4W	C212	1-123-604-00	ELECT	220uF	20%	63V
R651	1-247-891-00	CARBON	330K	5%	1/4W	C213	1-101-880-00	CERAMIC	47PF	5%	50V
R652	1-247-721-11	CARBON	4.7K	5%	1/4W	C214	1-161-379-00	CERAMIC	0.01uF	20%	25V
R653	△1-212-934-00	FUSIBLE	1	5%	1/2W F	C251	1-104-278-11	POLYSTYRENE	100PF	5%	50V
< VARIABLE RESISTOR >											
RT402	1-224-249-XX	RES, ADJ, SOLID 1K				C251	1-104-290-11	POLYSTYRENE	330PF	5%	50V
RT452	1-224-249-XX	RES, ADJ, SOLID 1K				C252	1-137-336-91	FILM	0.022uF	2%	100V
< CONNECTOR >											
SE1	1-564-242-00	PIN, CONNECTOR 5P				C253	1-124-748-11	ELECT	22uF	20%	100V(F870ES)
< BASE POST >											
TP1	1-535-139-00	BASE POST 14MM (10MM PITCH) 2P (F870ES)				C254	1-124-916-11	ELECT	22uF	20%	63V(F333ESL/F770ES)
TP2	1-535-139-00	BASE POST 14MM (10MM PITCH) 2P (F870ES)				C255	1-124-918-11	ELECT	47uF	20%	63V(F333ESL/F770ES)
< CONNECTOR >											
VH4	* 1-564-104-00	PIN, CONNECTOR 3P				C259	1-124-922-11	ELECT	1000uF	20%	63V(F870ES)
VH5	* 1-564-241-00	PIN, CONNECTOR 4P				C259	1-126-066-11	ELECT	470uF	20%	63V(F333ESL/F770ES)
VH6	* 1-564-241-00	PIN, CONNECTOR 4P				C261	1-124-122-11	ELECT	100uF	20%	50V

* A-4345-327-A EQ BOARD, COMPLETE											

(F333ESL/F770ES:AEP, UK)											
* A-4345-333-A EQ BOARD, COMPLETE (F770ES:Germany)											

* A-4345-360-A EQ BOARD, COMPLETE (F870ES)											

* 4-921-402-01 HEAT SINK											
7-682-548-09 SCREW +B 3X8											
< CAPACITOR >											
C201	1-104-278-11	POLYSTYRENE	100PF	5%	50V	IC201	8-759-711-53	IC	NJM2068S-D		
			(F770ES:Germany/F870ES)			IC251	8-759-711-53	IC	NJM2068S-D		
C201	1-104-290-11	POLYSTYRENE	330PF	5%	50V	< TRANSISTOR >					
			(F333ESL/F770ES:AEP, UK)			Q201	8-729-214-73	TRANSISTOR	2SK147-V		
C202	1-137-336-91	FILM	0.022uF	2%	100V				(F770ES:Germany/F870ES)		
C203	1-124-748-11	ELECT	22uF	20%	100V(F870ES)	Q201	8-729-217-04	TRANSISTOR	2SK170-V		
C203	1-124-916-11	ELECT	22uF	20%	63V(F333ESL/F770ES)				(F333ESL/F770ES:AEP, UK)		
C204	1-124-918-11	ELECT	47uF	20%	63V(F333ESL/F770ES)	Q202	8-729-203-45	TRANSISTOR	2SC3423-0		
C204	1-126-359-11	ELECT	47uF	20%	80V(F870ES)	Q203	8-729-281-54	TRANSISTOR	2SC1815-BL		
C206	1-137-332-31	FILM	0.016uF	2%	100V(F870ES)	Q204	8-729-201-56	TRANSISTOR	2SK246-GR2		
C206	1-137-334-31	FILM	0.016uF	2%	630V(F333ESL/F770ES)						

Note: The components identified by mark ▲ or dotted line with mark ▲ are critical for safety. Replace only with part number specified.

EQ FUNCTION

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark
Q205	8-729-127-53	TRANSISTOR	2SC2275-P		R225	1-219-024-91	FUSIBLE	120	5% 1/2W
Q206	8-729-201-56	TRANSISTOR	2SK246-GR2		R251	1-249-465-11	CARBON	47K	5% 1/4W
Q207	8-729-281-54	TRANSISTOR	2SC1815-BL		R252	1-247-706-11	CARBON	330	5% 1/4W
Q208	8-729-281-54	TRANSISTOR	2SC1815-BL		R253	1-247-713-11	CARBON	1K	5% 1/4W
Q209	8-729-214-73	TRANSISTOR	2SK147-V (F770ES:Germany/F870ES)		R254	1-247-700-11	CARBON	100	5% 1/4W
Q209	8-729-217-04	TRANSISTOR	2SK170-V (F333ESL/F770ES:AEP, UK)		R255	1-247-128-00	CARBON	750	5% 1/4W
Q251	8-729-214-73	TRANSISTOR	2SK147-V (F770ES:Germany/F870ES)		R256	1-247-128-00	CARBON	750	5% 1/4W
Q251	8-729-217-04	TRANSISTOR	2SK170-V (F333ESL/F770ES:AEP, UK)		R257	1-247-700-11	CARBON	100	5% 1/4W (F333ESL/F770ES:AEP, UK)
Q252	8-729-203-45	TRANSISTOR	2SC3423-0		R257	1-249-512-11	CARBON	22	5% 1/4W
Q253	8-729-281-54	TRANSISTOR	2SC1815-BL		R258	1-247-708-11	CARBON	470	5% 1/4W
Q254	8-729-201-56	TRANSISTOR	2SK246-GR2		R259	1-249-518-11	CARBON	39	5% 1/4W
Q255	8-729-141-10	TRANSISTOR	2SA985-QP		R260	1-247-704-11	CARBON	220	5% 1/4W
Q256	8-729-201-56	TRANSISTOR	2SK246-GR2		R261	1-247-721-11	CARBON	4.7K	5% 1/4W
Q257	8-729-201-53	TRANSISTOR	2SA1015-GR		R262	1-246-545-00	CARBON	1.0M	5% 1/4W
Q258	8-729-201-53	TRANSISTOR	2SA1015-GR		R263	1-249-844-11	CARBON	56K	1% 1/2W
Q259	8-729-214-73	TRANSISTOR	2SK147-V (F770ES:Germany/F870ES)		R264	1-247-700-11	CARBON	100	5% 1/4W
Q259	8-729-217-04	TRANSISTOR	2SK170-V (F333ESL/F770ES:AEP, UK)		R265	1-259-571-11	CARBON	4.7K	1% 1/2W (F870ES)
	< RESISTOR >				R265	1-249-818-11	CARBON	4.7K	1% 1/2W (F333ESL/F770ES)
R201	1-249-465-11	CARBON	47K	5% 1/4W	R267	1-260-661-11	CARBON	6.8	5% 1/4W
R202	1-247-706-11	CARBON	330	5% 1/4W	R268	1-247-700-11	CARBON	100	5% 1/4W
R203	1-247-713-11	CARBON	1K	5% 1/4W	R269	1-247-704-11	CARBON	220	5% 1/4W
R204	1-247-700-11	CARBON	100	5% 1/4W	R270	1-247-725-11	CARBON	10K	5% 1/4W
R205	1-247-128-00	CARBON	750	5% 1/4W	R271	1-247-704-11	CARBON	220	5% 1/4W
R206	1-247-128-00	CARBON	750	5% 1/4W	R272	1-247-717-11	CARBON	2.2K	5% 1/4W
R207	1-247-700-11	CARBON	100	5% 1/4W (F333ESL/F770ES:AEP, UK)	R273	1-247-723-11	CARBON	6.8K	5% 1/4W
R207	1-249-512-11	CARBON	22	5% 1/4W (F770ES:Germany/F870ES)	R274	1-247-713-11	CARBON	1K	5% 1/4W
R208	1-247-708-11	CARBON	470	5% 1/4W	R275	1-219-024-91	FUSIBLE	120	5% 1/2W
R209	1-249-518-11	CARBON	39	5% 1/4W		< SWITCH >			
R210	1-247-704-11	CARBON	220	5% 1/4W	S201	1-554-019-21	SWITCH, SLIDE (REMOTE TYPE)		
R211	1-247-721-11	CARBON	4.7K	5% 1/4W		(CARTRIDGE LOAD)			
R212	1-246-545-00	CARBON	1.0M	5% 1/4W		*****			
R213	1-249-844-11	CARBON	56K	1% 1/2W		* 1-637-081-11 FUNCTION BOARD (F870ES)			
R214	1-247-700-11	CARBON	100	5% 1/4W		*****			
R215	1-249-818-11	CARBON	4.7K	1% 1/2W (F333ESL/F770ES)		* 1-637-081-13 FUNCTION BOARD (F333ESL/F770ES)			
R215	1-259-571-11	CARBON	4.7K	1% 1/2W (F870ES)		*****			
R217	1-260-661-11	CARBON	6.8	5% 1/4W		*****			
R218	1-247-700-11	CARBON	100	5% 1/4W		* 1-564-599-11 PIN, CONNECTOR 8P			
R219	1-247-704-11	CARBON	220	5% 1/4W		(CAPACITOR)			
R220	1-247-725-11	CARBON	10K	5% 1/4W		C916			
R221	1-247-704-11	CARBON	220	5% 1/4W		1-124-631-11	ELECT 47uF	20%	16V
R222	1-247-717-11	CARBON	2.2K	5% 1/4W		< CONNECTOR >			
R223	1-247-723-11	CARBON	6.8K	5% 1/4W		EH16			
R224	1-247-713-11	CARBON	1K	5% 1/4W		* 1-564-506-11 PLUG, CONNECTOR 3P			
						EH35	* 1-564-512-11 PLUG, CONNECTOR 9P		
						EH40	* 1-564-505-11 PLUG, CONNECTOR 2P		
						EH42	* 1-564-506-11 PLUG, CONNECTOR 3P		

FUNCTION	AC SW	H.P	VOL	LED (VOL)	S.D
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< SWITCH >		EH37	* 1-564-505-11	PLUG, CONNECTOR 2P	
S101	1-572-096-11	SWITCH, ROTARY (WITH MOTOR) (F333ESL/F770ES)		EH40	* 1-564-505-11	PLUG, CONNECTOR 2P	
		*****				< TRANSISTOR >	
		* 1-637-085-11 AC SW BOARD *****		Q310	8-729-281-54	TRANSISTOR 2SC1815-BL	
		< SWITCH >				< RESISTOR >	
S801	△1-554-538-00	SWITCH, PUSH (AC POWER) (1 KEY) (F333ESL/F770ES)		R316	1-249-926-11	CARBON	1.3K 5% 1/4W
		< CONNECTOR >		R317	1-247-721-11	CARBON	4.7K 5% 1/4W
SE8	1-564-321-00	PIN, CONNECTOR 2P				< VARIABLE RESISTOR >	
		*****		RV304	1-241-290-11	RES, VAR, CARBON 30KX2 (ATTENUATOR)	
		* 1-637-086-11 H. P BOARD *****				< RELAY >	
		< CAPACITOR >		RY301	1-515-726-11	RELAY	
C503	1-102-973-00	CERAMIC 100PF (F770ES:Germany/F870ES)	5% 50V	RY901	1-515-622-11	RELAY	
C553	1-102-973-00	CERAMIC 100PF (F770ES:Germany/F870ES)	5% 50V			*****	
		< JACK >				* 1-637-084-11 LED (VOL) BOARD *****	
J401	1-507-796-71	JACK (HEADPHONES)				< DIODE >	
		*****		D508	8-719-303-02	DIODE SEL2510C-D	
		* 1-637-082-12 VOL BOARD *****				*****	
		< CAPACITOR >				* 1-637-087-11 S. D. BOARD *****	
C318	1-124-902-00	ELECT 0.47uF	20% 50V			< CAPACITOR >	
C319	1-104-272-11	POLYSTYRENE 33PF	10% 50V	C310	1-136-169-00	FILM 0.22uF	5% 50V
C369	1-104-272-11	POLYSTYRENE 33PF	10% 50V			< CONNECTOR >	
C918	1-124-631-11	ELECT 47uF	20% 16V				
		< DIODE >		EH13	* 1-564-507-11	PLUG, CONNECTOR 4P	
D301	8-719-912-20	DIODE 1SS120		EH26	* 1-564-507-11	PLUG, CONNECTOR 4P	
D933	8-719-912-20	DIODE 1SS120		EH27	* 1-564-507-11	PLUG, CONNECTOR 4P	
		< CONNECTOR >		EH38	* 1-564-506-11	PLUG, CONNECTOR 3P	
EH14	* 1-564-507-11	PLUG, CONNECTOR 4P		EH39	* 1-564-506-11	PLUG, CONNECTOR 3P	
EH28	* 1-564-509-11	PLUG, CONNECTOR 6P				< RESISTOR >	
EH30	* 1-564-507-11	PLUG, CONNECTOR 4P		R301	1-249-833-11	CARBON 20K 5% 1/2W	
EH34	* 1-564-507-11	PLUG, CONNECTOR 4P		R302	1-247-717-11	CARBON 2.2K 5% 1/4W	
EH36	* 1-564-505-11	PLUG, CONNECTOR 2P		R351	1-249-833-11	CARBON 20K 5% 1/2W	
				R352	1-247-717-11	CARBON 2.2K 5% 1/4W	
						< SWITCH >	
				S301	1-572-551-11	SWITCH, PUSH (2 KEY) (MUTING)	
				S304	1-572-551-11	SWITCH, PUSH (2 KEY) (SOURCE DIRECT)	

Note: The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

SP-SW SP TERMINAL TONE

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark						
< RESISTOR >																	
		* 1-637-088-12	SP-SW BOARD	*****		R443	1-247-727-11	CARBON	10	5%	1/2W						
< CAPACITOR >																	
C611	1-106-343-00	MYLAR	1000PF	5%	200V	R446	1-247-747-11	CARBON	470	5%	1/2W						
< CONNECTOR >																	
EH32	* 1-564-506-11	PLUG, CONNECTOR 3P				R450	1-247-747-11	CARBON	470	5%	1/2W						
< RESISTOR >																	
R618	1-247-741-11	CARBON	150	5%	1/2W	R493	1-247-727-11	CARBON	10	5%	1/2W						
R619	1-247-741-11	CARBON	150	5%	1/2W	R496	1-247-747-11	CARBON	470	5%	1/2W						
R621	1-247-747-11	CARBON	470	5%	1/2W	R500	1-247-747-11	CARBON	470	5%	1/2W						
R623	1-247-747-11	CARBON	470	5%	1/2W	R501	1-249-689-11	CARBON	4.7K	5%	1/2W						
R625	1-247-747-11	CARBON	470	5%	1/2W	R502	1-249-657-11	CARBON	220	5%	1/2W						
R627	1-247-747-11	CARBON	470	5%	1/2W	R503	1-247-727-11	CARBON	10	5%	1/2W						
(F770ES:Germany/F870ES)																	
< RELAY >																	
< SWITCH >																	
RY602	1-515-676-11	RELAY				RY603	1-515-676-11	RELAY									
S601	1-572-107-11	SWITCH, ROTARY (SPEAKERS)				< TEST POINT >											

* 1-637-089-12 SP TERMINAL BOARD																	

* 1-560-242-11 BUS BAR 3P																	
* 1-560-242-61 BUS BAR 2P																	
* 4-843-416-11 PLATE, FIXED, CAP																	
< CAPACITOR >																	
C501	1-106-361-00	MYLAR	0.0056uF	10%	100V	C301	1-136-173-00	FILM	0.47uF	5%	50V						
			(F770ES:Germany/F870ES)			C302	1-107-165-00	MICA	56PF	5%	50V						
C502	1-102-820-00	CERAMIC	330PF	5%	50V	C303	1-123-369-00	ELECT	4.7uF	20%	63V						
C551	1-106-361-00	MYLAR	0.0056uF	10%	100V	C304	1-123-369-00	ELECT	4.7uF	20%	63V						
C552	1-102-820-00	CERAMIC	330PF	5%	50V	C305	1-123-369-00	ELECT	4.7uF	20%	63V						
< DIODE >																	
D612	8-719-912-20	DIODE 1SS120				C306	1-136-155-00	FILM	0.015uF	5%	50V						
D613	8-719-912-20	DIODE 1SS120				C307	1-136-161-00	FILM	0.047uF	5%	50V						
< CONNECTOR >																	
EH31	* 1-564-506-11	PLUG, CONNECTOR 3P				C308	1-136-169-00	FILM	0.22uF	5%	50V						
EH33	* 1-564-506-11	PLUG, CONNECTOR 3P				C309	1-136-175-00	FILM	0.68uF	5%	50V						
EH45	* 1-564-507-11	PLUG, CONNECTOR 4P				C320	1-123-369-00	ELECT	4.7uF	20%	63V						
< COIL >																	
L401	* 1-422-009-13	COIL, AIR-CORE				C321	1-102-973-00	CERAMIC	100PF	5%	50V						
L451	* 1-422-009-13	COIL, AIR-CORE				C351	1-136-173-00	FILM	0.47uF	5%	50V						
(F770ES:Germany/F870ES)																	
< CAPACITOR >																	
						C352	1-107-165-00	MICA	56PF	5%	50V						
						C355	1-123-369-00	ELECT	4.7uF	20%	63V						
						C356	1-136-155-00	FILM	0.015uF	5%	50V						
						C357	1-136-161-00	FILM	0.047uF	5%	50V						
						C358	1-136-169-00	FILM	0.22uF	5%	50V						
						C359	1-136-175-00	FILM	0.68uF	5%	50V						
						C370	1-123-369-00	ELECT	4.7uF	20%	63V						
						C371	1-102-973-00	CERAMIC	100PF	5%	50V						
(F770ES:Germany/F870ES)																	

TONE

INPUT

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark	
		< IC >				C153	1-104-274-11	POLYSTYRENE	47PF	10%	50V	
IC301	8-759-602-19	IC	M5220L					< CONNECTOR >				
		< RESISTOR >				EH12	* 1-564-507-11	PLUG, CONNECTOR	4P			
R304	1-247-713-11	CARBON	1K	5%	1/4W			< JACK >				
R305	1-246-545-00	CARBON	1. 0M	5%	1/4W	J101	1-507-831-41	JACK, PIN	6P (CD/TUNER/PHONO)			
R306	1-247-758-11	CARBON	3. 3K	5%	1/2W	J102	1-507-831-41	JACK, PIN	6P (AUX/TAPE 3 REC OUT, IN)			
R307	1-247-713-11	CARBON	1K	5%	1/4W	J103	1-507-831-41	JACK, PIN	6P (DIRECT IN/ADAPTOR IN, OUT)			
R308	1-247-704-11	CARBON	220	5%	1/4W	J104	1-507-920-00	JACK, PIN	4P (TAPE 2 REC OUT, ON)			
R310	1-259-421-11	CARBON	510	5%	1/4W	J105	1-507-920-00	JACK, PIN	4P (DAT/TAPE 1 REC OUT, ON)			
R311	1-247-703-11	CARBON	180	5%	1/4W			< COIL >				
R312	1-247-718-11	CARBON	2. 7K	5%	1/4W	L101	1-424-397-11	COIL, CHOKE	200uH (F770ES:Germany/F870ES)			
R313	1-249-551-11	CARBON	910	5%	1/4W	L102	1-424-397-11	COIL, CHOKE	200uH (F770ES:Germany/F870ES)			
R314	1-246-545-00	CARBON	1. 0M	5%	1/4W	L151	1-424-397-11	COIL, CHOKE	200uH (F770ES:Germany/F870ES)			
R315	1-246-545-00	CARBON	1. 0M	5%	1/4W	L152	1-424-397-11	COIL, CHOKE	200uH (F770ES:Germany/F870ES)			
R354	1-247-713-11	CARBON	1K	5%	1/4W			< RESISTOR >				
R355	1-246-545-00	CARBON	1. 0M	5%	1/4W	R101	1-246-545-00	CARBON	1. 0M	5%	1/4W	
R356	1-247-758-11	CARBON	3. 3K	5%	1/2W	R102	1-246-545-00	CARBON	1. 0M	5%	1/4W	
R357	1-247-713-11	CARBON	1K	5%	1/4W	R103	1-246-545-00	CARBON	1. 0M	5%	1/4W	
R358	1-247-704-11	CARBON	220	5%	1/4W	R104	1-246-545-00	CARBON	1. 0M	5%	1/4W	
R360	1-259-421-11	CARBON	510	5%	1/4W	R105	1-246-545-00	CARBON	1. 0M	5%	1/4W	
R361	1-247-703-11	CARBON	180	5%	1/4W							
R362	1-247-718-11	CARBON	2. 7K	5%	1/4W	R106	1-246-545-00	CARBON	1. 0M	5%	1/4W	
R363	1-249-551-11	CARBON	910	5%	1/4W	R107	1-247-713-11	CARBON	1K	5%	1/4W	
R364	1-246-545-00	CARBON	1. 0M	5%	1/4W	R108	1-247-713-11	CARBON	1K	5%	1/4W	
R365	1-246-545-00	CARBON	1. 0M	5%	1/4W	R109	1-247-713-11	CARBON	1K	5%	1/4W	
		< VARIABLE RESISTOR >				R110	1-247-739-11	CARBON	100	5%	1/2W	
RV301	1-241-291-11	RES, VAR, CARBON	100K/100K	(BALANCE)				(F333ESL/F770ES:AEP, UK)				
RV302	1-241-292-11	RES, VAR, CARBON	10K	(TREBLE)								
RV303	1-241-293-11	RES, VAR, CARBON	10K	(BASS)								
		< SWITCH >										
S302	1-572-549-11	SWITCH, PUSH	(2 KEY)	(SUB SONIC)		R110	1-249-673-11	CARBON	1K	5%	1/2W	
S303	1-572-549-11	SWITCH, PUSH	(2 KEY)	(MODE)				(F770ES:Germany/F870ES)				
		*****				R111	1-246-545-00	CARBON	1. 0M	5%	1/4W	
		*****				R112	1-259-436-11	CARBON	2. 2K	5%	1/6W	
		*****						(F770ES:Germany/F870ES)				
		* 1-637-091-12 INPUT BOARD				R113	1-259-436-11	CARBON	2. 2K	5%	1/6W	
		*****						(F770ES:Germany/F870ES)				
		* 1-565-492-11 CONNECTOR, BOARD TO BOARD 16P				R120	1-246-545-00	CARBON	1. 0M	5%	1/4W	
		* 4-835-639-00 PLATE, GROUND				R151	1-246-545-00	CARBON	1. 0M	5%	1/4W	
		< CAPACITOR >				R152	1-246-545-00	CARBON	1. 0M	5%	1/4W	
C101	1-162-285-31	CERAMIC	180PF		10%	R153	1-246-545-00	CARBON	1. 0M	5%	1/4W	
		(F770ES:Germany/F870ES)				R154	1-246-545-00	CARBON	1. 0M	5%	1/4W	
C103	1-104-274-11	POLYSTYRENE	47PF		10%	R155	1-246-545-00	CARBON	1. 0M	5%	1/4W	
		(F770ES:Germany/F870ES)				R156	1-246-545-00	CARBON	1. 0M	5%	1/4W	
C151	1-162-285-31	CERAMIC	180PF		10%	R157	1-247-713-11	CARBON	1K	5%	1/4W	
		(F770ES:Germany/F870ES)				R158	1-247-713-11	CARBON	1K	5%	1/4W	
		R159										

INPUT LED (P.L) PREOUT CONTROL

CONTROL

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark
D914	8-719-912-20	DIODE	1SS120		R609	1-249-437-11	CARBON	47K	5% 1/4W
D915	8-719-912-20	DIODE	1SS120		R610	1-249-433-11	CARBON	22K	5% 1/4W
D916	8-719-912-20	DIODE	1SS120		R611	1-247-812-11	CARBON	160	5% 1/4W
D917	8-719-912-20	DIODE	1SS120		R616	1-249-398-11	CARBON	27	5% 1/4W
D918	8-719-912-20	DIODE	1SS120		R633	1-249-425-11	CARBON	4.7K	5% 1/4W
D919	8-719-912-20	DIODE	1SS120		R650	1-247-838-00	CARBON	2K	5% 1/4W
D920	8-719-912-20	DIODE	1SS120		R908	1-249-429-11	CARBON	10K	5% 1/4W
D921	8-719-912-20	DIODE	1SS120		R909	1-249-429-11	CARBON	10K	5% 1/4W
D922	8-719-912-20	DIODE	1SS120		R910	1-247-887-00	CARBON	220K	5% 1/4W
D923	8-719-912-20	DIODE	1SS120		R911	1-249-441-11	CARBON	100K	5% 1/4W
D924	8-719-912-20	DIODE	1SS120		R912	1-249-441-11	CARBON	100K	5% 1/4W
< CONNECTOR >									
EH1	* 1-564-506-11	PLUG, CONNECTOR	3P		R913	1-247-895-00	CARBON	470K	5% 1/4W
EH2	* 1-564-506-11	PLUG, CONNECTOR	3P		R914	1-249-405-11	CARBON	100	5% 1/4W
EH3	* 1-564-506-11	PLUG, CONNECTOR	3P		R915	1-249-430-11	CARBON	12K	5% 1/4W
EH4	* 1-564-507-11	PLUG, CONNECTOR	4P		R916	1-249-405-11	CARBON	100	5% 1/4W
EH5	* 1-564-505-11	PLUG, CONNECTOR	2P		R917	1-247-903-00	CARBON	1M	5% 1/4W
EH6	* 1-564-506-11	PLUG, CONNECTOR	3P		R918	1-249-429-11	CARBON	10K	5% 1/4W
EH7	* 1-564-506-11	PLUG, CONNECTOR	3P		R919	1-249-429-11	CARBON	10K	5% 1/4W
EH8	* 1-564-512-11	PLUG, CONNECTOR	9P		R920	1-249-425-11	CARBON	4.7K	5% 1/4W
EH9	* 1-564-512-11	PLUG, CONNECTOR	9P		R921	1-249-429-11	CARBON	10K	5% 1/4W
EH10	* 1-564-505-11	PLUG, CONNECTOR	2P		R922	1-249-425-11	CARBON	4.7K	5% 1/4W
EH11	* 1-564-511-11	PLUG, CONNECTOR	8P		R923	1-249-425-11	CARBON	4.7K	5% 1/4W
EH46	* 1-564-506-11	PLUG, CONNECTOR	3P		R924	1-249-425-11	CARBON	4.7K	5% 1/4W
< IC >									
IC901	8-759-635-31	IC	M50253P		R925	1-249-425-11	CARBON	4.7K	5% 1/4W
IC902	8-759-239-47	IC	TC74HC123AP		R926	1-249-413-11	CARBON	470	5% 1/4W
IC903	8-759-635-88	IC	M50720-255SP		R927	1-249-429-11	CARBON	10K	5% 1/4W
IC904	8-719-902-56	IC	PC817		R928	1-249-429-11	CARBON	10K	5% 1/4W
IC905	8-759-604-84	IC	M5F7806L		R929	1-249-429-11	CARBON	10K	5% 1/4W
IC906	8-759-604-84	IC	M5F7806L		R930	1-249-429-11	CARBON	10K	5% 1/4W
IC907	8-759-962-08	IC	BA6208		R931	1-249-429-11	CARBON	10K	5% 1/4W
IC908	8-759-962-08	IC	BA6208		R933	1-249-520-11	CARBON	47	5% 1/4W
< TRANSISTOR >									
Q601	8-729-201-53	TRANSISTOR	2SA1015-GR		R934	1-249-504-11	CARBON	10	5% 1/4W
Q602	8-729-201-53	TRANSISTOR	2SA1015-GR		R936	1-249-504-11	CARBON	10	5% 1/4W
Q603	8-729-140-96	TRANSISTOR	2SD774-34		R938	1-249-429-11	CARBON	10K	5% 1/4W
Q604	8-729-281-54	TRANSISTOR	2SC1815-BL		R940	1-249-399-11	CARBON	33	5% 1/4W
Q901	8-729-900-36	TRANSISTOR	DTC124ES		R941	1-249-441-11	CARBON	100K	5% 1/4W
Q902	8-729-119-78	TRANSISTOR	2SC2785-HFE		R942	1-249-405-11	CARBON	100	5% 1/4W
Q903	8-729-620-05	TRANSISTOR	2SC2603-EF		R943	1-249-429-11	CARBON	10K	5% 1/4W
Q904	8-729-900-61	TRANSISTOR	DTA114ES		R944	1-249-425-11	CARBON	4.7K	5% 1/4W
Q912	8-729-119-77	TRANSISTOR	2SA1175-FEK		< RELAY >				
Q913	8-729-900-61	TRANSISTOR	DTA114ES		RY601	1-515-614-11	RELAY		
< RESISTOR >									
R606	1-249-429-11	CARBON		10K	5%	1/4W	< VIBRATOR >		
R608	1-249-437-11	CARBON		47K	5%	1/4W	X901	1-577-260-21	VIBRATOR, CERAMIC

SW (F) **EYE** **OUTLET** **V.S**

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			<u>Remark</u>
	* 1-637-094-12	SW (F) BOARD			*****	S906	1-572-198-11	SWITCH, KEY BOARD (TAPE 2)			
		*****				S907	1-572-198-11	SWITCH, KEY BOARD (DAT/TAPE 1)			*****
		⟨ DIODE ⟩									
D506	8-719-301-49	DIODE SEL2810A									
D507	8-719-301-49	DIODE SEL2810A									
D925	8-719-301-49	DIODE SEL2810A (F770ES(GOLD)/F870ES(GOLD))									
D925	8-719-303-02	DIODE SEL2510C-D (F333ESL/F770ES(BLACK)/F870ES(BLACK))									
D926	8-719-301-49	DIODE SEL2810A (F770ES(GOLD)/F870ES(GOLD))									
D926	8-719-303-02	DIODE SEL2510C-D (F333ESL/F770ES(BLACK)/F870ES(BLACK))									
D927	8-719-301-49	DIODE SEL2810A (F770ES(GOLD)/F870ES(GOLD))									
D927	8-719-303-02	DIODE SEL2510C-D (F333ESL/F770ES(BLACK)/F870ES(BLACK))									
D928	8-719-301-49	DIODE SEL2810A (F770ES(GOLD)/F870ES(GOLD))									
D928	8-719-303-02	DIODE SEL2510C-D (F333ESL/F770ES(BLACK)/F870ES(BLACK))									
D929	8-719-301-49	DIODE SEL2810A (F770ES(GOLD)/F870ES(GOLD))									
D929	8-719-303-02	DIODE SEL2510C-D (F333ESL/F770ES(BLACK)/F870ES(BLACK))									
D930	8-719-301-49	DIODE SEL2810A (F770ES(GOLD)/F870ES(GOLD))									
D930	8-719-303-02	DIODE SEL2510C-D (F333ESL/F770ES(BLACK)/F870ES(BLACK))									
D931	8-719-301-49	DIODE SEL2810A (F770ES(GOLD)/F870ES(GOLD))									
D931	8-719-303-02	DIODE SEL2510C-D (F333ESL/F770ES(BLACK)/F870ES(BLACK))									
		⟨ RESISTOR ⟩									
R613	1-249-799-11	CARBON	750	5%	1/2W						
R628	1-247-703-11	CARBON	180	5%	1/4W						
R629	1-247-703-11	CARBON	180	5%	1/4W						
R901	1-247-887-00	CARBON	220K	5%	1/4W						
R902	1-247-887-00	CARBON	220K	5%	1/4W						
R903	1-247-887-00	CARBON	220K	5%	1/4W						
R904	1-247-887-00	CARBON	220K	5%	1/4W						
R905	1-247-887-00	CARBON	220K	5%	1/4W						
R906	1-247-887-00	CARBON	220K	5%	1/4W						
R907	1-247-887-00	CARBON	220K	5%	1/4W						
		⟨ SWITCH ⟩									
S901	1-572-198-11	SWITCH, KEY BOARD (PHONO)									
S902	1-572-198-11	SWITCH, KEY BOARD (TUNER)									
S903	1-572-198-11	SWITCH, KEY BOARD (CD)									
S904	1-572-198-11	SWITCH, KEY BOARD (AUX)									
S905	1-572-198-11	SWITCH, KEY BOARD (TAPE 3)									

		* 1-637-095-11 EYE BOARD			*****						

		⟨ CAPACITOR ⟩									
C914	1-126-022-11	ELECT				47uF		20%	10V		
		⟨ IC ⟩									
IC909	8-749-920-59	IC A1QH3020S									
		⟨ RESISTOR ⟩									
R932	1-249-421-11	CARBON				2. 2K 5%	1/4W				

		* 1-640-345-11 OUTLET BOARD (F770ES/F870ES)			*****						

		1-533-183-11 HOLDER, FUSE									
		* 4-923-814-01 PLATE, CONNECTION (F770ES/F870ES)									
		⟨ CAPACITOR ⟩									
C801	▲1-161-741-00	CERAMIC 0. 001uF 10% 400V(F770ES/F870ES)									
		⟨ CONNECTOR ⟩									
SE100	1-564-321-00	PIN, CONNECTOR 2P (F770ES/F870ES)									
VH100	* 1-564-321-00	PIN, CONNECTOR 2P (F770ES/F870ES)									
VH101	* 1-564-321-21	PIN, CONNECTOR 2P (F770ES/F870ES)									

		* 1-637-837-12 V. S BOARD (E) (F333ESL)			*****						

		1-533-183-11 HOLDER, FUSE (F333ESL)									
		⟨ CAPACITOR ⟩									
C901	1-161-741-00	CERAMIC 0. 001uF 10% 400V (E) (F333ESL)									
		⟨ SELECTOR ⟩									
S802	▲1-572-009-11	SELECTOR, VOLTAGE (E) (F333ESL)									
		⟨ CONNECTOR ⟩									
SE2	1-564-687-11	PIN, CONNECTOR 3P (E) (F333ESL)									
SE3	1-564-687-11	PIN, CONNECTOR 3P (E) (F333ESL)									
SE51	1-564-321-00	PIN, CONNECTOR 2P (E) (F333ESL)									
VH50	* 1-564-321-00	PIN, CONNECTOR 2P (E) (F333ESL)									

Note: The components identified by mark ▲ or dotted line with mark ▲ are critical for safety.
Replace only with part number specified.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
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ACCESSORIES & PACKING MATELIALS

1-465-801-11 REMOTE COMMANDER (RM-S703)
 (F333ESL/F770ES(BLACK)/F870ES(BLACK))
 1-465-801-21 REMOTE COMMANDER (RM-S703)
 3-753-600-11 MANUAL, INSTRUCTION
 3-753-600-41 MANUAL, INSTRUCTION
 3-753-601-11 MANUAL, INSTRUCTION (GERMAN)
 (Germany:F870ES)
 4-847-802-00 SCREW (AEP, E, Germany)
 * 4-931-954-01 CUSHION
 * 4-945-279-01 INDIVIDUAL CARTON (F770ES)
 * 4-945-280-01 INDIVIDUAL CARTON (F333ESL)
 * 4-945-282-01 INDIVIDUAL CARTON (F870ES)

HARDWARE LIST

#1	7-682-148-15 SCREW, TR
#2	7-682-546-09 SCREW, +B 3X5, PAWL
#3	7-682-547-09 SCREW +BVTT 3X6 (S)
#4	7-682-548-09 SCREW +B 3X8
#5	7-682-549-04 SCREW +B 3X10
#6	7-682-668-09 SCREW +PSW 4X30
#7	7-683-255-58 SET SCREW 5X6 HEXAGON SOCKET
#8	7-684-024-04 N 4, TYPE 2
#9	7-685-153-19 SCREW +P 3X30 TYPE2 SLIT
#10	7-685-234-19 SCREW +KTP 2.6X8 TYPE2NON-SLIT
#11	7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S
#12	7-685-647-79 SCREW +BVTP 3X10 TYPE2 SLIT
#13	7-685-650-79 SCREW +BVTP 3X16 TYPE2 SLIT
#14	7-688-004-02 W 4, SMALL

